Biological Assessment	USDA Forest Service	Idaho Panhandle National Forests	Bonners Ferry Ranger District 6286 Main St. Bonners Ferry, ID 83805 Phone: (208) 267-5806 Fax: (208) 267-6754

File Code: 2670 **Date**: November 30, 2018

Subject: Biological Assessment, *wildlife*, Camp Robin Project

To: Jeanne Higgins, IPNF Forest Supervisor

INTRODUCTION

Threatened and Endangered species are managed under authority of the Federal Endangered Species Act (36 U.S.C. 1531-1544) and the National Forest Management Act (16 U.S.C. 1600-1614). The Endangered Species Act requires that Federal agencies ensure all actions that they "authorize, fund, or carry out" are not likely to jeopardize the continued existence of any threatened or endangered species. Agencies are also required to develop and carry out conservation programs for threatened and endangered species.

USDA Forest Service Policy (FSM 2670) requires a Biological Assessment (BA) to be completed to review programs or activities in sufficient detail to determine how a project or proposed activity may affect any threatened, endangered or proposed species or critical habitat. The biological assessment process is intended to analyze and document activities necessary to ensure proposed management activities will not jeopardize the continued existence of listed species or cause adverse modification of critical habitat.

PROPOSED ACTION

The Idaho Panhandle National Forests (IPNF) proposes to conduct a variety of management activities on National Forest System (NFS) lands within and around several creek drainages including the Round Prairie, Gillon, Mission, Brush, Rock, and Meadow Creek drainages. Proposed activities include vegetation management and fuel reduction activities, as well as activities to manage noxious weeds, roads, motorized trails, recreation facilities, ungulate forage, and fish passage.

Vegetation management would take place on about 5,365 acres within the approximately 42,279-acre Camp Robin Project Area and covers two distinct locations in the Bonners Ferry Ranger District of the Idaho Panhandle National Forests (figure 1). The project action area (general area affected directly or indirectly by the proposed activities) is within two subbasins (8th code hydrologic units, or HUCs). The portion of the action area to the north of HWY 95 is entirely within the Moyie Subbasin, extending all the way to the Canadian border and west to east from the area surrounding the Gillon Creek drainage to Hogue Mountain vicinity, respectively. The portion south and east of HWY 95 is generally split between the Moyie and Lower Kootenai Subbasins and is generally bounded to the east along the ridgeline from Tungsten Mountain to Queen Mountain. More specifically, the proposed Camp Robin activities are located within all or portions of Federal lands in: T65N, R1E, Section 35; T65N, R2E, Sections 8, 9, 14-17, 19-23, 29, and 30; T64N, R1E, Sections 2-4, 9-11, 14, 15, 22, 23, 26, 27, 34-36; T64N, R2E, Sections 31 and 32; T63N, R1E, Sections 2, 11-13, 24; T63N, R2E, Sections 6, 8-10, 16-18, 20,30, and 32; T62N,

R2E, Sections 4-6, Boise Meridian (figure 2).

The primary focus of the Camp Robin Project is to manage the forest stands to maintain or improve resilience to disturbances such as drought, insect and disease outbreaks, and wildfires. There is also concern about areas where forest fuel accumulations are high and could contribute to a severe wildfire, making suppression difficult near private lands. Other resource objectives include providing off-road user groups a consolidated, clearly identified motorized trail system that provides for existing and expected future use, provide parking for motorized trail recreation, improve campground facilities at Dawson and Smith Lakes, improve big game forage, and treat noxious weeds. The project meets the intent of both the IPNF forest plan and the CFLRP.

Vegetation Management Activities

Vegetation management activities and fuels treatments were designed to maintain or improve landscape resiliency, increase resistance to disturbance and reduce wildfire threat within the project area. The following methods will be used to manage the vegetation in the Camp Robin Project Area.

Regeneration Treatments

- **Seedtree with Reserves** – Designed to regenerate and maintain a stand with two age classes by removing most trees except for a small number of widely dispersed trees that will be retained for seed production and to produce a new age class. Large diameter western larch and white pine will be retained in the overstory where they exist. No future overstory removals would be conducted. These areas would appear very open with 5 to 10 trees per acre and would include "reserves" of tree groups in various areas of the stand.
- **Shelterwood with Reserves** – Designed to create two-storied stands featuring retention of large-diameter ponderosa pine, western larch and white pine in the overstory and regeneration of these same species in the understory. No future overstory removals would be conducted. These areas would appear moderately open with an average of 10 to 20 trees per acre and include "reserves" of tree groups in various areas of the stand.
- **Clearcut** - All trees will be removed by this prescription. This treatment is being used to expand the right-of-way clearing limits on the south side of US 95 near Robinson Lake of for safety reasons at the request of the Idaho Department of Transportation.

Intermediate Treatments

- **Variable Density Thin** – This treatment would result in relatively fine scale mosaic of small openings (gaps), thinned areas, and untreated leave areas (skips). Generally, an average of 20% of the post treatment mosaic within these units would be in gaps, 20% in skips and 60% thinned. The creation of distinctly heterogeneous conditions across this unit is intended to facilitate the development of increasingly complex structure as this stand grow into the future. The trees removed from this unit would generally be smaller or less dominant, diseased or of a species not desired for future stand composition. Trees would be thinned in areas where there is the opportunity to maintain and enhance the growth of existing ponderosa pine, western larch and Douglas-fir.
- **Improvement Cut** – Improvement cutting treatments would occur in stands on drier habitats with a significant ponderosa pine and/or western larch component and low to moderate levels of insect and disease activity. This treatment is designed to promote and maintain mature ponderosa pine/Douglas-fir communities in these areas. Improvement cutting will focus on "daylighting" ponderosa pine and western larch by removing competing undesirable species (primarily grand fir, lodgepole pine and Douglas-fir) with the goal of increasing the diameter growth, vigor and resilience to disturbance of these structurally and compositionally desirable stand elements.

- **Commercial Thinning** – Commercial thinning would occur within existing young stands to remove less desirable trees and favor potentially long-lived early seral tree species, manage density, and manage blister rust.
- **Single Tree Selection** – This treatment would be used to remove individually selected overstory trees in previously managed stands to improve stand composition and quality. Areas of established regeneration within these units would be thinned in conjunction with this operation. A large portion of the removals would occur to achieve goals related to sanitation and salvage, with fading Douglas-fir, Grand fir and Lodgepole pine preferentially selected for removal. Sanitation = the removal of trees to improve stand health by stopping or reducing the actual or anticipated spread of insects or diseases. Salvage = the removal of dead trees or trees damaged or dying because of injurious agents other than competition, to recover economic value that would otherwise be lost.
- **Precommercial Thinning** – In old harvest areas where the regenerating trees have grown dense and are beginning to compete with each other for light, water and nutrients, we would thin outthe smaller suppressed trees and primarily select larch and white pine as leave trees with a target density of about 200 to 300 trees per acre. Cut trees would be small and could be made available for biomass use where feasible.
- **Prescribed Burning (Underburning without Harvest)** – Prescribed underburning will be used in one large area (about 386 acres) that is generally steep, rocky, with decadent brush and a patchy overstory of a mix of conifer species including lodgepole, Douglas-fir, and grand fir. The underburns will consume surface fuels such as grasses, brush, timber litter and jackpots of down wood. They will also function to maintain or enlarge grass and brush openings and potentially create new opening in the tree canopy. This treatment will encourage the rejuvenation and regeneration of desirable early seral vegetation including palatable shrubs.
- **Fuel Reduction Activities** – Pre-existing forest fuels and those created by debris left from logging activities would be treated through prescribed underburning, machine piling, or mastication. In machine-piled units, only fuels in excess of what is desired to meet coarse woody debris and soil productivity objectives would be piled. The piles would subsequently be burned. In precommercial thinning units excess fuels would have limbs and branches removed and left to decompose naturally. In precommercial thinning units within high use recreation areas or along property boundaries and open roads, the cut trees would be masticated or mechanically piled and burned.

Specifically, the project would authorize vegetation management activities on approximately 5,365 acres, including 4,890 acres of timber harvest and 89 acres of precommercial thinning (figure 3. On one 386-acre area near Tungsten Ridge, underburning without harvest is proposed to bring fire into an area with fire-resistant species and is intended to consume surface fuels and ladder fuels, not the overstory canopy. Burning would be expected to improve forage production for ungulates and grizzly bear (table 1).

Table 1 Proposed Vegetation Treatment within the Camp Robin Project area

Treatments	Acres
Regeneration Harvest Prescriptions	
Shelterwood with reserves	1,450
Seedtree with reserves	1,713
Clearcut	10
Total	**3,173**
Intermediate Harvest Prescriptions	
Variable Density Thinning	13
Improvement Cut	585
Commercial Thinning	1,082
Single Tree Selection	38
Total	**1,718**
Total Commercial Harvest	**4,890**
Precommercial thinning	89
Eco Burn	386
Total Vegetation Treatments	**5,365**

Where trees to be removed have commercial value, we would use various types of equipment based on the terrain and access constraints. Of the 4,890 proposed harvest acres, helicopter yarding would be used on approximately 395 acres (8%) not easily accessible by road, skyline yarding would be used on approximately 347 acres (7%) of steep terrain, tractor yarding would be used on approximately 3,020 acres (62%) of flat to gentle slopes, and a combination of skyline and tractor yarding would be used on approximately 80 acres (2%) where slopes vary, and the remaining 1,048 acres (21%) using a log forwarder. In areas of precommercial thinning, small trees and large shrubs would be cut by hand with a chainsaw and left on site or ground up by mastication (grinding small trees and shrubs) using a small excavator, piled and burned.

Preexisting forest fuels and those created by debris left from logging activities would be treated either through prescribed underburning (approximately 453 acres); or by machine piling (1,719 acres), whole-tree yarding (1,843 acres), a combination of whole-tree yarding/underburning (approximately 870 acres) and mastication (5 acres).

Transportation Management Activities

All or portions of several currently drivable NFS roads in the project area (2.8 miles open roads and 0.7 miles of gated roads) have been identified as needed for the duration of project activities, but unnecessary for short-term (10 years) post-project management. Some of these roads would be initially maintained or reconstructed to accomplish project activities, then stored (stored roads would be put in a condition where they are not drivable by motorized vehicle and periodic maintenance is no longer required, but they would still be available if needed for future management). Proposed road management activities within the project area and specifically within the Bears Outside Recovery Zone (BORZ) are shown below in tables 2 and 9. Figures 2 and 3 show project area road management activities.

In addition, about 1.9 miles of currently open, drivable roads are proposed for storage that are not needed for project activities. These include the lower portion of open Road 2491A, open Road 2491C, open Road 2497, and open Road 2547A. Combined, a total of 5.4 miles of currently open or gated, drivable roads would be placed into long-term storage (figure 4).

Table 2 Transportation Management Activities in the Project Area

Road Management	Miles (project area)
Road Maintenance	54.5
Maintain, use, then Store (all currently drivable)	1.3
Road Reconstruction and use	2.8
Reconstruction, use, then Store (2.2 miles of these are drivable)	7.5
Roads Adding to System and leave open	0.5
Roads Adding to System then Store (397CUA)	1.0
Road Storage only (2491A, 2491C, 2497, 2547A; all currently drivable)	1.9
Currently drivable roads to be stored	5.4
Temporary Road Construction	13.1
Unclassified/closed roads converted to open OHV/ATV trails (2491, 2491D, 2491AUA, and 940UA)	2.6
Block access via road decommissioning to unclassified road (2494UB, 2494UD)	2.1
Other Management Associated with Roads	
Fish Barriers Removed (NFS road 2504)	1
Armoring of NFS road 2222 at the intersection with Fry Creek	yes
Culverts Removed (TBD during storage activities)	TBD
Gravel Pit Development	2
Parking Areas Improved (Arndt and Meadow Creek Trailheads)	2

We also propose to convert about 2.6 miles of old, closed and unclassified roads into >50" OHV/ATV trails to provide through routes for OHV enthusiasts. Any size vehicle that has 4-wheel drive will be allowed to utilize this trail according to the proposed travel management designation as a >50" OHV trail. An additional 2.1 miles of unclassified roads (2494UB and 2494UD) potentially receiving unauthorized use will be decommissioned, as appropriate, to prevent use. Special Use Permits (SUPs) would be granted to two local land owners; one to allow year-round access to a residence (NFS Road 397E) and the other to allow use to access private land for the purpose of hauling about 10 loads of logs from his property (NFS Road 449B). The SUP for residence access would be on-going and long-term and utilize about 0.15 mile of a new, temporary road constructed to facilitate implementation of the Camp Robin project. This small segment would be added to the NFS road system after project activities are completed, and his original access road would be placed into long-term storage at project completion. The temporary SUP for log haul would authorize temporary use of about 0.2 miles of system road. Use would be expected to occur during the summer of 2018. One small segment of road (2547UD; 0.1 mile) would be added to the NFS road system. This segment was created to improve navigation to and from NFS Roads 397 and 2547 but was never officially added to the road system. This proposal would correct this oversight. Additionally, Road 397CUA would be added to the NFS road system but immediately placed in storage following project activities.

Approximately 13.1 miles of temporary road construction would be needed to access some of the proposed harvest units. There are old, existing prisms for about half of the proposed temporary roads (6.49 miles), with about 1.5 miles of these currently existing as motorized trails. The remaining temporary road segments (about 6.6 miles) do not currently have old prisms. All temporary roads would be closed to public access during project implementation and decommissioned immediately following completion of project activities requiring access. The exception to this is the 1.5 miles of temporary roads utilizing existing motorized trails for access (Temp roads 27, 28, and 29). These temporary road segments would

be closed to all public motorized use during project activities and then placed back into their previous condition as a motorized trail. This would include narrowing the access points to allow only ATV access once more (see Conservation Measures for Grizzly Bears).

The culvert that passes Wall Creek under NFS Road 2504 impedes upstream fish passage to about one mile of spawning and rearing habitat. We propose to remove the culvert during the storage of this road and re-contour as needed.

The intersection of NFS road 2222 and Fry Creek will require armoring and stabilization to facilitate log-haul traffic. Instream sediment barriers will be securely installed upstream and downstream of the creek crossing to prevent sediment transport in either direction (outside BORZ and Lynx Analysis Unit (LAU)).

We propose to improve trailhead parking (for motorized Trail 409) on NFS Road 273A and for the Bussard Mountain trail system on NFS Road 2499 in order to provide a safer area large enough to accommodate vehicle parking and trailer loading and off-loading (figure 3).

Gravel sources for road management activities would come from the Gillon Creek gravel pit on NFS Road 273 (just off of HWY 95). Crushing and hauling activities would occur for a few months while the project roads are being maintained and/or reconstructed.

Other Proposed Activities

Additional recreation activities include the creation of approximately 4 miles of a new mountain bike trail that would connect the Brush Lake trail system (figure 3) to the Danquist Trail (#225) and improvements to the fishing docks at Brush Lake and Smith Lake, as they are unsafe when water levels fluctuate causing the ramps to become over steepened and slippery. We also propose to replace the vault toilet at the Smith Lake campground.

Weed populations along trails and roads (including haul routes, landings, and roads proposed for storage) would be pretreated within the project planning area using accepted herbicides and weed management practices. Noxious weed treatment would be conducted according to guidelines established in the Bonners Ferry Noxious Weed Control Project FEIS (USDA Forest Service 1995) and the proposed IPNF Weeds EIS (ongoing NEPA). Methods of weed containment or control may include biological, cultural, mechanical, and chemical management practices (our analysis will cover use of accepted herbicides and weed management practices in the project area, as well as all NFS roads leading into or going out of the project area). We would also provide follow-up weed treatments (by contractor or Forest Service) in the area to keep existing weed populations and potential new weed invaders in check.

Timing and Duration of Activity

Timber harvest would be under a five-year contract starting in fall, 2019. No timber harvest, precommercial thinning, hauling on yearlong restricted roads (NFS road 941), road reconstruction, temporary road construction, road storage, grapple piling or slashing activities would take place between April 1 and June 15 within the Mission Moyie BORZ. Additionally, no trail improvement/creation activities (trailhead parking improvements or hiking trail construction) would take place during these dates. To the extent practicable, all burning would take place in the fall rather than spring. The timing of tree planting would not be restricted.

Implementation of project activities would be divided into four spatial phases within the Camp Robin Project area.

- Phase 1: Units 1, 2, 3, 5, 6, 7 would occur first. Road reconstruction and temporary road construction of FS Roads 2573UA and 2573F would occur during this phase. The exception is that Unit 3 could occur during this phase OR during Phase 2.

- Phase 2: All helicopter units (101, 103, 104, 107 and 108) and potentially Unit 3 would be logged following the completion of Phase 1 and would be in a different bear year. The purchaser would have 3 years to complete Phase 2 operations due to the complexities associated with helicopter logging.
- Phase 3: Unit 4 would occur after the completion of Phase 2 and would occur in a different bear year.
- The remaining harvest units north of HWY 95 would not be restricted in their timing due to their proximity to heavily used open roads and vicinity to Robinson Lake, a much used recreational area. This means they could be harvested before, concurrent with, or after the helicopter activities occur. However, keep in mind that contractors would not be operating in these remaining units all at the same time so there would be adjacent areas for bears to move to during the ground-based activities. Spring bear seasonal restrictions remain in place for all these phased harvest activities.
- Phase 4: Units 34 through 45. Harvest and associated activities would be completed prior to or after Phase 5.
- Phase 5: Units 46 through 62. Harvest and associated activities would be completed prior to or after Phase 4.
- Phase 1, 2, or 3 could occur at the same time as Phase 4 or 5 due to their geographic separation.

Harvest and associated activities for units outside of the Mission-Moyie BORZ (Units 63 through 68) could occur concurrently with any of the above phased activities.

Harvest activities in the portion Unit 43 that is further than 500 meters from FR397 would occur during the winter period (12/1 through 3/31).

Implementation of the eco-burn unit located within the interior secure habitat would occur after the Hellroaring Project harvest is complete (in a separate bear year).

To avoid disturbance to big game on winter range, harvest activities would occur outside of the winter/spring period (between December 1 and April 30) for the following units: 3, 10, 11, 44, 46, 49, 101 and 103.

LISTED SPECIES

On September 11, 2018, USFWS issued a refined site specific project list of threatened and endangered species, along with designated critical habitat that may be present on the IPNF (USDI Fish and Wildlife Service 2018) that may occur within the Camp Robin Project area. There were no Endangered species on the list. Threatened terrestrial wildlife species included grizzly bear (Ursus arctos) and Canada lynx (Lynx canadensis). Proposed threatened species included the North American wolverine (Gulo gulo luscus). On September 12, 2014 the FWS issued a final rule to revise designation of critical habitat for Canada lynx (USDI Fish and Wildlife Service 2014a). The Camp Robin project would not affect designated Canada lynx critical habitat.

The Selkirk Mountain woodland caribou population was emergency-listed as endangered in 1983, and a final ruling of its status occurred in 1994 (USDI Fish and Wildlife Service 1994). On November 28, 2012, FWS designated critical habitat for the southern Selkirk Mountains population of woodland caribou (USDI Fish and Wildlife Service 2012). On May 8, 2014 FWS proposed a revision of the current woodland caribou listing based on defining the Southern Mountain Caribou DPS and designating it as threatened under the ESA (USDI Fish and Wildlife Service 2014b). The recovery area for the population is in the Selkirk Mountains of northern Idaho, northeastern Washington and southern British Columbia, Canada. Since the Camp Robin area provides no suitable habitat for woodland caribou and is outside areas designated for its recovery, it was not included on the U.S. Fish and Wildlife Service species list for this project.

EFFECTS ANALYSIS AND DETERMINATION

Based on the known distribution of these species, habitat requirements, and habitat availability, Canada lynx and grizzly bear may be affected by the proposed action (table 3).

Table 3 Summary of Effects

Species	Species or Habitat Present?	Species or Habitat Potentially Affected?	Likelihood of Adverse Effects	Determination of Effects
Endangered				
Woodland Caribou	No	No	None	**No Effect**
Woodland Caribou Critical Habitat	No	No	None	**No Effect**
Threatened				
Canada Lynx	Yes	Yes	Low	**May Affect, Not Likely to Adversely Affect**
Grizzly Bear	Yes	Yes	Low	**May Affect, Not Likely to Adversely Affect**
Canada Lynx Critical Habitat	No	No	None	**No Effect**
Proposed				
North American Wolverine	**Yes**	**Yes**	**Low**	**Will not jeopardize the continued existence of the DPS of the North American wolverine**

Canada Lynx

Summary of Effects

Although approximately 1,021 acres of the proposed vegetation treatments are within the Round Prairie LAU (646 acres commercial harvest, 357 acres eco-burn, and 18 acres pre-commercial thinning), the project would not be expected to have a substantive impact on Canada lynx because the vast majority of the proposed activities are taking place within non-lynx habitat or they are outside of the LAU. The extent of timber harvest in lynx habitat would be limited to about 15 acres, with all of these acres in transition, or secondary habitat (within the 200 meter buffer of subalpine fir/Engelmann spruce habitat) and is currently in a habitat condition that is not providing quality snowshoe hare habitat. Approximately 3 acres of the proposed treatment acres would be converted into a stand initiation condition. There would be no vegetation management activities in mature, multi-story lynx habitat in this proposal, nor any precommercial thinning in lynx habitat. The proposed mountain bike trail traverses through lynx habitat but is not considered a vegetation management activity. Loss of this linear strip of habitat (about 0.8 acres) would not be expected to alter the function of these stands for lynx or snowshoe hare. The NRLMD indicates that none of the objectives, standards, and guidelines identified for vegetation management activities, with the exception of Objective VEG 03 that specifically concerns wildland fire use, apply to wildfire suppression, wildland operations, wildland fire use, or removal of vegetation for permanent developments such as mineral operations, ski runs, roads, and the like (USDA Forest Service 2007). Recreation facilities designed for summer use have very little effect on lynx (Ruediger et al. 2000). The

2013 Canada Lynx Conservation Assessment and Strategy (Interagency Lynx Biology Team, 2013) conclude that "there is no information to suggest that trails have negative impacts on lynx".

The Camp Robin Project proposal would be consistent with Standards and Guidelines in the Northern Rockies Lynx Management Direction (NRLMD; USDA Forest Service 2007) and the revised Land Management Plan (USDA Forest Service 2015). Based on the analysis, review of best scientific information, and consistency with the NRLMD, this proposal may affect, but is not likely to adversely affect Canada lynx.

There is no designated Canada lynx critical habitat within the action area; therefore, the project would have no effect on designated critical habitat.

Habitat Relationships and Affected Environment

Canada lynx occur in boreal, sub-boreal and western montane forests, and their distribution is nearly coincident with that of the snowshoe hare, their primary prey (Ruediger et al. 2000). Lynx habitat consists of a variety of forest ages and structural stages, including young regenerating forests and mature multi-storied forests that provide snowshoe hare habitat. Both snow conditions and vegetation types are important factors to consider in defining lynx habitat. In northern Idaho and northwestern Montana, lynx generally occur in moist, cold habitat types above 4,000 feet elevation. Canada lynx primary habitat in North Idaho was initially broadly characterized to include areas with site potential to produce subalpine fir, mountain hemlock, Western hemlock, cedar and moist grand fir climax habitats (USDI Fish and Wildlife Service 2000). Dry forest communities (ponderosa pine and Douglas-fir habitat types) and upper subalpine habitat types (alpine larch and whitebark pine cover types) are considered non-lynx habitat. Based on a more refined understanding of lynx habitat requirements, the IPNF more narrowly defined lynx habitat (as referenced from now on) to include only subalpine fir/Engelmann spruce habitats, and cool/moist (cedar, Western hemlock and moist grand fir) habitat types occurring adjacent to (within 200 meters of) spruce/fir habitats.

The Canada lynx was listed as threatened on March 21, 2000. The conservation of lynx populations is the greatest concern in the western mountains of the United States because of the peninsular and disjunct distribution of suitable habitat at the southern periphery of the species' range. Identified risk factors that can impact lynx populations mainly address alteration of forest habitats. Upon listing, lynx management on Federal lands was guided by the Canada Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et al. 2000). The LCAS directed agencies to delineate Lynx Analysis Units (LAUs) in order to evaluate and analyze effects of planned and on-going projects on lynx and their habitat, and provided recommendations for management within these habitats. In 2007, based on the recommendations of the LCAS and more recent research findings, the Forest Service adopted the Northern Rockies Lynx Management Direction (NRLMD) (USDA Forest Service 2007), which provides lynx management standards and guidelines that were incorporated into existing forest plans. This direction was subsequently retained in the Revised Land Management Plan for the IPNF (USDA Forest Service 2015) and associated Biological Opinion (USDI Fish and Wildlife Service 2013a).

The NRLMD contains four vegetation management standards, with two of them remaining essentially the same as the 2000 LCAS: 1) if more than 30 percent of the lynx habitat in a LAU is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects (Standard VEG S1), and 2) timber management projects shall not regenerate more than 15 percent of lynx habitat on NFS lands within a LAU in a ten year period (Standard VEG S2).

Snowshoe hares may reach highest densities in young coniferous forests or in "mature forests with a dense understory of shrubs, aspen and/or conifers" (Ruediger et al. 2000). Mature and late successional forests may provide more stable habitat for a longer time period compared to early successional forests; and also

provide habitat for red squirrels, an important secondary prey species (Buskirk et al. 2000). In response to subsequent research (for example, Squires et al. 2006) that associated the presence of mature or late-successional multi-storied forests with persistence of lynx populations, the NRLMD identified the importance of these stands for providing winter snowshoe hare habitat. Winter habitat may be the most limiting for lynx, since starvation mortality is more common during this season and lynx use a narrower range of available habitat than in summer (Squires et al. 2010). As a result, vegetation management that reduces snowshoe hare habitat in these stands is prohibited (Standard VEG S6) with minor exceptions.

The NRLMD labels two older multi-storied stages – the understory reinitiation and old forest multi-storied – as providing winter hare habitat. Squires et al. (2010) perhaps offer the best description of these stands as forests composed of mixed conifers, but predominately consisting of Engelmann spruce and subalpine fir "in the overstory and midstory" with branching that descended to the snow surface to provide dense horizontal cover for hares.

Similar to restrictions in multi-storied stands, the NRLMD generally does not allow precommercial thinning in lynx habitat (Standard VEG S5) except for under very specific conditions. Precommercial thinning has been identified as a risk factor for lynx because it has the potential to reduce winter snowshoe hare habitat in young, regenerating forests. While research indicates that lynx spend relatively little time hunting in these juvenile stands during winter in the Northern Rockies (Squires et al. 2010, Squires et al. 2006), they likely serve as source habitats for snowshoe hare populations. Precommercial thinning in these stands may reduce the inherent capacity of the habitat to produce snowshoe hares.

Recently published information on Canada lynx in Holbrook et al. 2016, Holbrook et al. 2017, Holbrook et al. 2018, and Kosterman et al. 2018 has been reviewed in relation to how they relate to management direction provided in the NRLMD (USDA Forest Service 2018a). The structural classes used by Kosterman et al. (2018) to describe habitat use by lynx are similar to those used in the 2014 Kosterman Thesis and in Holbrook et al. 2017, and the findings in all three papers are not the same as structural classes used to define and develop objectives, standards and guidelines in the Northern Rockies Lynx Management Direction (NRLMD). Forest structural classes used in the NRLMD are based on structural stages defined by Oliver and Larson (1996), and do not "crosswalk" well with structural classes defined in the Kosterman Thesis (2014), in Holbrook et al. 2017, or in Kosterman et al. 2018. Thus, direct comparisons are difficult. Conclusions in Holbrook et al. 2016 relative to the importance of horizontal cover, subalpine fir, Engelmann spruce, and lodgepole pine as indicators of hare habitat are consistent with those identified by Ruggiero et al. (1999) and Ruediger et al. (2000), both of which provided the foundation for vegetation management guidance in the NRLMD.

Direction for denning habitat protection in the NRLMD is addressed by Guideline VEG G11. This guideline is based on the general consensus of lynx researchers that denning habitat, in most cases, is not limiting in lynx habitat. At the time of listing, lynx denning habitat had been described as "dense, mature forest habitats that contain large woody debris, such as fallen trees or upturned stumps, to provide security and thermal cover for kittens" (Koehler and Aubry 1994). Subsequent research in northwest Montana has found that lynx use a variety of conditions for den sites, and used young regenerating forests as well as mature forests (USDA Forest Service 2007). The key component for lynx den sites appears to be the presence of down woody debris, rather than stand age. Since most of the Forests affected by the NRLMD (including the IPNF) have existing direction to provide old growth and retain dead and down material, denning habitat was not considered a limiting factor. Most lynx habitat on the Forest is confined to higher elevation timber stands that were historically not highly valued for timber harvest. As a result, the amount of lynx habitat affected by logging since 1940 is proportionately less than on the Forest as a whole – likely leading to an abundance of lynx denning habitat.

Road density does not appear to affect lynx habitat selection (Ruediger et al. 2000). Lynx may tolerate some level of human disturbance (including roads), and most research indicates that lynx do not alter their

behavior to avoid humans (Aubry et al. 2000, McKelvey et al. 2000, Mowat et al. 2000). Lynx may use little-traveled roadways for travel and foraging in good snowshoe hare habitat, but they prefer to move through continuous forests frequently using ridges, saddles and riparian areas (Ruediger et al. 2000). It is possible that the road construction associated with historic timber sales may have resulted in long-term negative impacts to lynx through increased access for trappers. Trapping can be a substantial source of mortality in areas where lynx are legally trapped (Canada and Alaska) (Koehler and Aubry 1994), and some level of incidental take from traps meant for other species occurs even though intentional lynx harvest has been illegal in Idaho since 1996. Potential risk factors related to roads or road use are addressed by NRLMD Guidelines ALL G1, and HU G6-G9.

Critical habitat that has been designated for Canada lynx on the IPNF includes virtually all identified lynx habitat in the American-Canuck and Deer-Skin LAUs in the extreme northeastern portion of the Forest (USDI Fish and Wildlife Service 2014a). These lynx analysis units are a few miles east and across the Moyie River valley from the Camp Robin area. No Canada lynx critical habitat would be affected by this proposal.

Lynx presence has been historically reported throughout the Idaho Panhandle, including both verified and unverified sightings from several locations on the Bonners Ferry Ranger District. Confirmed lynx sightings have been infrequent on the IPNF, but include documented lynx presence in the American-Canuck LAU in the early 2000s and more recently in 2011. In addition, from 2010-2014, focused surveys detected five individual lynx on the North Zone. This includes three individuals in the Purcell Mountains, one in the Selkirks, and one in the west Cabinet Mountains (Lucid et al. 2016). The west Cabinet individual was unintentionally captured, and later released fitted with a radio-collar, in the Twentymile Creek area of the Bonners Ferry Ranger District well south of the project area. These surveys also detected 18 lynx in the Purcells and one lynx in the west Cabinets that were not identifiable to individual. Subsequent follow-up surveys in 2015-16 detected lynx in each of the 3 target areas known to be occupied by lynx detected from the 2010-14 MBI survey (Lucid et al. 2017). Lucid et al (2017) detected a minimum of 6 individual lynx in the Selkirk (n = 1 individual), Purcell (n = 4 individuals), and West Cabinet (n = 1 individual) mountain ranges. Despite the limited number of verifiable sightings in the area, lynx analysis units have been designated to serve as the fundamental units for measuring Canada lynx recovery. Therefore, within lynx analysis units, lynx presence is assumed and the appropriate management emphasized.

Camp Robin Project activities would take place in the Round Prairie LAU, which does not include designated critical habitat. This LAU is approximately 39,086 acres in size, less than half of which (14,062 NFS acres) are considered lynx habitat (spruce/fir habitats and cool/moist habitats in close proximity to spruce/fir). To create an LAU with an adequate amount of primary habitat recommended by the LCAS (more than 6,400 acres of Engelmann spruce/subalpine fir potential vegetation), it was necessary to combine somewhat isolated higher elevation habitats in the Mission Mountain/Harvey Mountain area to the north with similar habitat in the Tungsten Ridge/Queen Mountain/Bussard Mountain area to the south into a single unit (figures 2 and 5). This process incorporated several thousand acres of low elevation or dry forest areas in and adjacent to Round Prairie itself that are not identified lynx habitat.

Additionally, approximately 3,814 acres of the Round Prairie LAU are non-Federal ownership and were not included in the lynx habitat assessment (with the exception of calculating VEG S1). Although most of these acres are at low elevations in or near Round Prairie, about 960 acres are above 4,000 feet elevation and may be providing lynx habitat. Since these are on south-facing slopes, the amount of actual lynx habitat is less than 960 acres due to generally warmer, drier conditions compared to surrounding areas. Because of the preponderance of lynx forest types on Forest Service, BLM, and National Park lands, Federal land management assumes the largest single role in the conservation of lynx in western portions of its range. Additionally, habitat on private ownerships is highly susceptible to adverse habitat modifications, and the presence of suitable habitat on these lands cannot be relied upon over time. For

these reasons, a conservative approach to calculations in this analysis will consider up to 960 acres of other ownership to be perpetually in an early successional stage that does not yet provide winter snowshoe hare habitat, and will be counted towards Standard VEG S1.

Currently, the Round Prairie LAU may have as many as 1,763 acres (803 acres Federal lands plus up to 960 acres private), or 11.7 percent of lynx habitat in the lynx analysis unit, in an early successional stage not yet providing lynx habitat (Standard VEG S1). This number includes 236 acres of harvest treatment currently being implemented in the Hellroaring Project area. The Hellroaring EA authorized 372 acres of regeneration treatments, however, after layout, the actual regen acres decreased to 236 acres. Approximately 646 acres (4.6 percent of lynx habitat) will have been regenerated on National Forest System lands in the previous 10 years (Standard VEG S2). Potential lynx denning in the form of mature forest lynx habitat is abundant (approximately 7,890 acres) and well-distributed throughout the Round Prairie LAU.

Direct and Indirect Effects

The entirety of the Camp Robin Project area is within the wildland-urban interface (WUI) as mapped by Boundary County, ID – and therefore proposed activities that contribute to fuels management may be exempted from vegetation management standards of the NRLMD (USDA Forest Service 2007, USDI Fish and Wildlife Service 2007).

Approximately 27 percent, or about 10,736 acres of the Camp Robin Project area overlaps the Round Prairie LAU, however, only 3,888 acres of these are considered lynx habitat. Camp Robin Project proposes vegetation treatment on approximately 1,021 acres within the Round Prairie LAU, however, the vast majority of these treatments would take place within non-lynx habitat (1,006 acres, table 4).

Approximately 15 acres of lynx habitat in the Round Prairie LAU would have treatment (tables 4 and 5, figure 5). The majority of the 15 acres of harvest are not considered regeneration harvest. The 12 acres of commercial thinning within lynx habitat does not revert to a stand initiation condition. The remaining treatment acres are outside of the LAU (4,359 acres). Regeneration harvest would contribute to both Standard VEG S1 (amount of lynx habitat in the lynx analysis unit in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat) and Standard VEG S2 (amount having been converted within the previous ten years). Affected stands are expected to begin to provide high quality winter snowshoe hare habitat within approximately 16 to 20 years following treatment.

Table 4 Camp Robin Project vegetation management summary broken down by Canada lynx habitat and non- lynx habitat within the Round Prairie LAU

Treatment	Lynx Habitat[1] (acres)	Non-Lynx Habitat[2] (acres in LAU)	Total Treatment in LAU (acres)
Shelterwood with reserves	0	492	492
Seedtree with reserves	3	49	52
Clearcut	0	1	1
Variable Density Thinning	0	0	0
Improvement Cut	0	0	0
Commercial Thinning	12	89	101
Single Tree Selection	0	0	**0**
Total Commercial Harvest	**15**	**631**	**646**
Precommercial thinning	0	18	18
Burn only	0	357	357
Total Vegetation Treatments	**15**	**1,006**	**1,021**

[1] Subalpine fir/Engelmann spruce habitats, and cool/moist habitat types within 200 meters of spruce/fir habitats

[2] Dry forest communities, upper subalpine habitat types, and cool/moist habitat types more than 200 meters from spruce/fir habitats

Table 5 Acres of Lynx Habitat by prescription treatment.

Unit Number	Treatment Prescription	Acres within Lynx Habitat
51	Commercial Thin	12
55	Seedtree with Reserves	3

The environmental baseline for the Round Prairie LAU includes past timber sales authorized under the Mission-Brush EIS, Northern Prairie EA and East Fork Meadow EA and ongoing sales authorized under the Hellroaring EA. These projects collectively account for approximately 803 acres of lynx habitat that is in an early successional stage not yet providing winter snowshoe hare habitat. Consequently, after Camp Robin Project implementation, the total amount of lynx habitat in an early successional stage not yet providing winter snowshoe hare habitat in the Round Prairie LAU would be 1,766 acres, or 11.8 percent of lynx habitat in the LAU (see table 6, 567 acres (past) + 236 acres (Hellroaring; ongoing) + 3 acres (Camp Robin)). Approximately 649 of these acres (4.6 percent) would be regenerated by timber harvest on NFS lands in the previous 10-year period (table 6). When the potential effects of this proposal are added to actions previously consulted on, the Round Prairie LAU would remain compliant with NRLMD Standards VEG S1 (no more than 30 percent of lynx habitat in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat) and VEG S2 (no more than 15 percent of lynx habitat regenerated by timber management on NFS lands in a 10-year period).

Table 6 Combined effects of past, ongoing and proposed projects on Standards VEG S1 and VEG S2 in the Round Prairie Lynx Analysis Unit

Source	VEG S1[1] acres (%)	VEG S2[2] acres (%)
Existing - Federal	567 (3.7[3])	410 (2.9)[3]
Existing - Private	960 (6.4)	n/a
Existing - Total	1,527 (10.2)	410 (2.9)
Hellroaring (**ongoing**)	236 (1.6)	236 (1.7)
Baseline	**1,763 (11.7)**	**646 (4.6)**
Camp Robin	3 (0.02)	3 (0.02)
TOTAL	**1,766 (11.8)**	**649 (4.6)**

[1] Lynx habitat in a stand initiation structural stage not yet providing winter snowshoe hare habitat. Calculations include lynx habitat on private (14,062 acres + 960 acres = 15,022 acres)

[2] Lynx habitat regenerated by timber management on NFS lands in the previous ten years (NFS only).

[3] Lynx habitat regenerated by timber management on NFS lands was generated by a FACTs (Forest Activities database) query for regeneration treatments and Date Completed within lynx habitat.

Based on habitat evaluations within all lynx habitat stands that overlap proposed harvest units, there would be no harvest activities in mature, multi-story lynx habitat or areas capable of achieving this stage within the next 10 to 20 years. No precommercial thinning would occur in lynx habitat in this proposal. Approximately 18 acres of precommercial thinning is proposed within the LAU, however, these acres are not considered lynx habitat based on the site potential and characteristics of the stand (as described in "Habitat Relationships and Affected Environment" section). Therefore, the precommercial thinning of these acres would not negatively impact lynx or their habitat. As a result, this proposal would be consistent with NRLMD Standards VEG S5 and VEG S6.

Although openings greater than 40 acres (up to several hundred acres) would be created by regeneration harvest under this proposal, they would not substantially impede lynx movement within or between LAUs because numerous retention (leave) areas, riparian buffers, and other stands not recently harvested would continue to provide forested travel corridors. Retention areas could result in opening size reduction of up to 40 percent (see Camp Robin Forest Vegetation Report), which would effectively result in a thinning in portions of regeneration units, leaving movement corridors through larger openings. Units 51 and 55, overlap portions of lynx habitat (table 5).

The Round Prairie LAU contains abundant amounts of mature (but not necessarily mature multi-storied) forest in lynx habitat that is well-distributed throughout. Because of this abundance (over 7,800 acres of mature and multi-sized sawtimber), and with a minimal amount of lynx denning habitat being potentially affected, it can reasonably be expected that they would contain sufficient amounts of denning structures after project implementation under this proposal. In addition, the proposed timber harvest would not have substantial effects to alternate lynx prey species (such as red squirrels) that require forest cover.

Approximately 357 acres, of the 386 acre eco burn only prescription, would occur within the LAU however it is non-lynx habitat consisting of predominantly pole size Douglas-fir and lodgepole pine overstory with benches of mixed shrub and scree openings moving upslope toward the ridge. This burn is expected to enlarge these openings, rejuvenate the shrub community as well as create other openings in the overstory. Effects to lynx would be minor, as no mapped lynx habitat would be affected.

As discussed above, lynx tolerate some level of human disturbance and does not appear to alter their behavior to avoid humans. Consequently, the disturbance created by the proposed harvest would not be expected to greatly affect lynx behavior or movement. Similarly, timber harvest and precommercial thinning in areas outside LAUs would have little (if any) effect on lynx since they are low-elevation sites that are assumed not to support reproducing populations of lynx due to lack of boreal forest habitat.

The Round Prairie Lynx Analysis Unit is an identified linkage area that may provide connectivity between the Purcell and Selkirk mountain ranges. It is unlikely that timber harvest on the scale of this proposal would substantially impede movement of wide-ranging carnivores in the foreseeable future. While regeneration harvest of up to 3,173 acres may appear considerable, more than 86 percent of the project area would not be affected. Forested north-south corridors would remain intact adjacent to and through the project area along Mission Creek, Miller Creek, Round Prairie Creek, Hellroaring Creek, Brush Creek, and Rock Creek and forested cover would allow travel along Tungsten Ridge at the eastern side of the project area. Since lynx prefer to travel along ridges and riparian areas, preservation of cover in these areas would continue to provide for lynx movement through the project area.

As discussed above, road density does not appear to affect lynx habitat selection and lynx are tolerant of some level of human disturbance. However, access via roads may increase the mortality risk to lynx from incidental trapping. The reduction of open motorized route miles by a net of about 1.8 miles would reduce potential incidental trapping mortality for this species since trappers would be less likely to access these areas. The conversion of existing undetermined roads and stored roads to motorized trails occurs outside of lynx habitat and would have little effect on Canada lynx because it does not impact their habitat nor would it be expected to hinder lynx travel between LAUs. Similarly, temporary road construction and issuance of Special Use Permits on Road 397E and the private property access road (449B) will not occur within lynx habitat and would not be expected to impact lynx in a measurable way.

The proposed mountain bike trail traverses habitat outside and inside of the Round Prairie LAU. The upper elevation portion of the proposed trail would cross through lynx habitat on approximately 0.7 miles of the trail as it ascends toward the ridge, ultimately connecting with the existing motorized trail system (Trail 23A). Less than ½ acre of lynx habitat would be permanently removed to create the non-motorized tread, with the appropriate width and height clearance required for Class 3, single lane trails. Loss of this linear strip of habitat would not be expected to alter the function of these stands for lynx or hare. The Human Use objectives and guidelines in the NRLMD (HU G3, G6, G7, G8, G9, and G11) apply to the trail portion of the project (USDA Forest Service 2007). The 2013 Canada Lynx Conservation Assessment and Strategy (Interagency Lynx Biology Team 2013) conclude that "there is no information to suggest that trails have negative impacts on lynx". Lynx are tolerant of some level of human disturbance and the addition of this trail is not expected to alter how lynx use this habitat. Lynx would be expected to easily move away from any disturbance associated with human use of the trail. Habitat evaluation surveys were conducted along the portions of the trail that crosses lynx habitat to assess the lynx habitat along the trail. In general, the proposed trail traverses lynx habitat within four stands, much of which would cross large openings of ceanothus brush fields, or closed canopy stands with very little development of the understory or secondary canopy. About 270 meters along a stretch of the proposed trail, as it is roughly laid out, would traverse through mature multistoried lynx habitat. To minimize potential impacts to mature, multistoried lynx habitat, a project design feature has been included which indicates that multi-storied lynx habitat would be avoided. The trail would be modified to avoid loss of vegetation providing quality hare forage, particularly winter hare forage (S. Petesch 2018, email communication).

Improvements to recreation facilities such as docks and sanitation facilities in campgrounds (Brush Lake and Smith Lake) would also have no measurable effect on Canada lynx as these areas are located outside of the LAU.

Invasive plant (weed) treatments would occur along roads, trailheads, and other disturbed areas. This activity could inadvertently reduce hare habitat (shrubs) in treated areas, but would affect an inconsequential amount of lynx habitat.

Relevant Standards and Guidelines from the Northern Rockies Lynx Management Direction are addressed as follows:

Standard ALL S1: *New or expanded permanent development and vegetation management projects must maintain habitat connectivity in an LAU and/or linkage area.*

The Round Prairie LAU is an identified linkage area that may provide connectivity between the Purcell and Selkirk mountain ranges. It is unlikely that timber harvest on the scale of this proposal would substantially impede movement of wide-ranging carnivores in the foreseeable future. While harvest of up to 1,021 acres in the Round Prairie LAU may appear considerable, only 15 acres of this is lynx habitat. In addition, more than 86 percent of the Camp Robin Project area would not be affected. Forested travel corridors will remain available within the intermediate harvest units, along Harvey Creek and unnamed tributaries to Harvey and Round Prairie Creeks and in untreated stands. Forested cover would allow east-west travel along Tungsten Ridge along the east edge of the project area. Since lynx prefer to travel along ridges and riparian areas, preservation of cover in these areas would continue to provide for lynx movement. This proposal would comply with Standard ALL S1.

Standard LAU S1: *Changes in LAU boundaries shall be based on site-specific habitat information and after review by the Forest Service Regional Office.*

The Camp Robin Project is not proposing any changes in LAU boundaries.

Standard VEG S1: *Unless a broad scale assessment has been completed that substantiates different historic levels of stand initiation structural stages limit disturbance in each LAU as follows: If more than 30 percent of the lynx habitat in an LAU is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects.*

Currently, the Round Prairie LAU contains as much as 1,527 acres (10.2 percent) of lynx habitat in the stand initiation stage not yet providing winter snowshoe hare habitat. Additionally, implementation of the Hellroaring Project decision is underway and will result in 236 acres of stand initiation structural stage not yet providing winter snowshoe hare habitat, bringing the baseline acres up to 1,763 (803 acres NFS and 960 acres non-NFS) or 11.7 percent. Approximately 3 acres (0.02 percent) of lynx habitat would be converted into a stand initiation condition by the Camp Robin proposal. When considered cumulatively with ongoing timber sales, up to 1,766 acres (11.8 percent) of lynx habitat in the LAU would be in a stand initiation stage not yet providing winter snowshoe hare habitat (table 6). Consequently, this proposal would comply with Standard VEG S1.

Standard VEG S2: *Timber management projects shall not regenerate more than 15 percent of lynx habitat on NFS lands within an LAU in a ten-year period.*

The Round Prairie LAU currently has about 410 acres (2.9 percent) of lynx habitat on NFS lands that

has been regenerated by timber management activities within the last 10 years. Additionally, implementation of the Hellroaring Project decision is underway and will result in 236 acres of regeneration treatment, bringing the baseline acres up to 646 acres of lynx habitat regenerated within a LAU within 10 years. The Camp Robin proposal will add an additional 3 acres of treatment creating stand initiation conditions, bringing the total to 649 or 4.6 percent, which is well below the 15 percent maximum regeneration allowed in lynx habitat within a 10 year period. Consequently, this proposal would comply with Standard VEG S2.

Standard VEG S5: *Precommercial thinning projects that reduce snowshoe hare habitat may occur from the stand initiation structural stage until the stands no longer provide winter snowshoe hare habitat only:*
1) within 200' of administrative sites, 2) for research studies or genetic tree tests evaluating genetically improved reforestation stock, 3) based on new information that is peer reviewed and accepted by the regional level of the Forest Service, and state level of FWS, where a written determination states that a project is not likely to adversely affect lynx or that a project is likely to have short-term adverse effects on lynx or its habitat, but would result in long-term benefits to lynx or its habitat, 4) for conifer removal in aspen, or daylight thinning around individual aspen trees, where aspen is in decline, 5) for daylight thinning of planted rust-resistant white pine where 80% of the winter snowshoe hare habitat is retained, or 6) to restore whitebark pine.

The Camp Robin Project proposes no pre-commercial thinning in lynx habitat. Of the proposed 89 acres of PCT, approximately 18 acres is within the Round Prairie LAU and none of these acres are considered to be lynx habitat. See the "Canada Lynx" section for more details. Consequently, alternative 2 would comply with Standard VEG S5.

Standard VEG S6: *Vegetation management projects that reduce snowshoe hare habitat in multi-story mature or late successional forests may occur only: 1) within 200' of administrative sites, 2) for research studies or genetic tree tests evaluating genetically improved reforestation stock, 3) for incidental removal during salvage harvest (e.g. removal due to location of skid trails).*

No timber harvest in multi-story mature or late-successional forests would occur in this proposal. Therefore, this proposal would comply with Standard VEG S6.

Standard LINK S1: *When highway or forest highway construction or reconstruction is proposed in linkage areas, identify potential highway crossings.*

There is no highway or forest highway construction or reconstruction proposed. Forest road reconstruction would take place on currently drivable roads, or roads that would be placed in long- term storage following implementation, so no crossings would be needed. Consequently, this proposal would comply with Standard LINK S1.

Guideline ALL G1: *Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways or forest highways across Federal land. Methods could include fencing, underpasses, or overpasses.*

There is no highway or forest highway construction or reconstruction proposed. Forest road reconstruction would take place on currently drivable roads, or roads that would be placed in long- term storage following implementation, so no crossings would be needed. Consequently, this proposal would be consistent with Guideline ALL G1.

Guideline VEG G1: *Vegetation management projects should be planned to recruit a high density of conifers, hardwoods, and shrubs where such habitat is scarce or not available. Priority for treatment should be given to stem-exclusion, closed-canopy structural stage stands to enhance habitat conditions for lynx or their prey (e.g. mesic, monotypic lodgepole stands). Winter snowshoe hare habitat should be*

near denning habitat.

Many of the stands within the Camp Robin Project area are currently dominated by relatively homogenous expanses of lodgepole pine and declining grand fir and Douglas-fir stands. The vast majority of the proposed treatment areas fall outside of lynx habitat and are being managed to mimic historic conditions and reduce insect and disease hazards. Only 15 acres of harvest treatments are within lynx habitat. Denning habitat will remain interspersed within and adjacent to the treatment areas. Consequently, this proposal would comply with this guideline.

Guideline VEG G4: *Prescribed fire activities should not create permanent travel routes that facilitate snow compaction. Constructing permanent firebreaks on ridges or saddles should be avoided.*

There would be no permanent firebreaks constructed for this project and no permanent travel routes would be established. Consequently, this proposal would comply with Guideline VEG G4.

Guideline VEG G5: *Habitat for alternate prey species, primarily red squirrel, should be provided in each LAU.*

The Round Prairie LAU contains over 7,700 acres of well-distributed mature forest within lynx habitat (post Hellroaring Project implementation), providing substantial habitat for alternate prey species such as red squirrels. No more than 0.04 percent (3 acres) of this would be affected by timber harvest. Consequently, this proposal would be consistent with Guideline VEG G5.

Guideline VEG G10: *Fuel treatment projects within the WUI as defined by HFRA should be designed considering Standards VEG S1, S2, S5 and S6 to promote lynx conservation.*

The Camp Robin Project is a fuels treatment project within the wildland-urban interface (WUI) as defined by the Healthy Forests Restoration Act (HFRA). The project was designed with input from the Wildlife Biologist and in consideration of Standards VEG S1, VEG S2, VEG S5 and VEG S6 as directed by Guideline VEG G10. Where proposed vegetation management activities overlapped field verified multi-storied lynx habitat, these areas were dropped from the proposal. The project is consistent with VEG S1, VEG 2, VEG 5 and VEG S6. See the "Canada Lynx" section for more details. Consequently, proposed action would be consistent with Guideline VEG G10.

Guideline VEG G11: *Denning habitat should be distributed in each LAU in the form of pockets of large amounts of large woody debris, either down logs or root wads, or large piles of small wind thrown trees ("jack-strawed" piles). If denning habitat appears to be lacking in the LAU, then projects should be designed to retain some coarse woody debris, piles, or residual trees to provide denning habitat in the future.*

Potential denning habitat in the form of mature forest is currently abundant (about 55 percent of the LAU, post Hellroaring Project implementation) and well distributed throughout the Round Prairie LAU. Since denning habitat can be found in a variety of forest structures and in small areas, and is not a limiting factor for lynx, timber harvest on about 15 acres (0.1 percent) of lynx habitat in the LAU is expected to have relatively minor effects. The IPNF Forest Plan identifies a desired condition where down wood, especially down logs, are available throughout the Forest for species, like lynx, whose habitat requirement includes this component (FW-DC-WL-14). The Camp Robin Project was designed to retain down wood to meet the Forest Plan guideline (FW_GDL-VEG-03). Consequently, this proposal would be consistent with Guideline VEG G11.

Guideline LINK G1: *NFS lands should be retained in public ownership.*

The project does not involve transfer of ownership of NFS lands and therefore would be consistent with Guideline LINK G1.

Guideline HU G3: *Recreation developments and operations should be planned in ways that both provide for lynx movement and maintain the effectiveness of lynx habitat.*

A portion (approximately 0.7 miles) of the proposed mountain bike trail traverses through lynx habitat up to the Tungsten Ridge area to connect with the existing trail system in that area. This equates to under 0.5 acre of habitat lost due to trail tread. Loss of this amount of habitat is not expected to impact how lynx use this area for foraging or denning, nor would it act as a barrier to travel. Lynx have been shown to have a certain level of tolerance to human presence. The expected use of this trail would not be expected to alter significantly the effectiveness of lynx habitat and a design feature is in place that eliminates impacts to mature multistoried lynx habitat.

Guideline HU G6: *Methods to avoid or reduce effects on lynx should be used in lynx habitat when upgrading unpaved roads to maintenance levels 4 or 5, if the result would be increased traffic speeds and volumes, or a foreseeable contribution to increases in human activity or development.*

Unpaved roads would be improved only to the extent necessary to make them safe for timber haul. Roads would not be upgraded to maintenance levels 4 or 5, and proposed improvements are not expected to increase traffic speeds or volume, or increase future human activity or development.

Guideline HU G7: *New permanent roads should not be built on ridge-tops and saddles, or in areas identified as important for lynx habitat connectivity. New permanent roads and trails should be situated away from forest stringers.*

Approximately 0.61 mile of new permanent road will be added to the Forest Motor Vehicle User Map. About 0.15 mile will be added to allow a private land owner easier access to his property. Another 0.10 mile is part of an existing road that is getting use and will be added to the system. Another 0.36 mile was identified as needed for future management. Approximately 2.6 miles of old road prisms and skid roads will be converted into motorized trails. None of these new motorized routes are within lynx habitat nor are they on ridge-tops or saddles. There will be a total net reduction of 2.5 miles of motorized routes, with about 0.2 acres of these in lynx habitat. Approximately 0.7 miles of new mountain bike/hiker trail will be constructed through lynx habitat. This will impact approximately 0.5 acres of lynx habitat in a five foot wide linear strip. The trail travels through stands that are generally closed canopied with contiguous cover with periodic large openings of ceanothus shrubs, ascending up a generally west facing slope. Connectivity within these stands would remain functional. Consequently, the Camp Robin Project would be consistent with Guideline HU G7.

Guideline HU G8: *Cutting brush along low-speed, low-traffic-volume roads should be done to the minimum level necessary to provide for public safety.*

Cutting brush along designated haul routes would be done to the Forest Service standard, then allowed to revegetate naturally on roads to be placed into long-term storage. The Camp Robin Project would be consistent with Guideline HU G8.

Guideline HU G9: *On new roads built for projects, public motorized use should be restricted. Effective closures should be provided in road designs. When the project is over, these roads should be reclaimed or decommissioned, if not needed for other management objectives.*

Temporary roads (~13.1 miles) built for project activities would remain unavailable for public use during implementation, and would be obliterated following project activities. The Camp Robin Project would be consistent with Guideline HU G9.

Guideline HU G11: *Designated over-the-snow routes or designated play areas should not expand outside baseline areas of consistent snow compaction, unless designation serves to consolidate use and improve lynx habitat. This may be calculated on an LAU basis, or on a combination of immediately adjacent LAUs.*

The Camp Robin Project would not change currently designated over-the-snow routes or designated play areas. Consequently, the proposal would be consistent with Guideline HU G11.

Since the project does not involve livestock management, guidelines pertaining to this issue (Guidelines GRAZ G1-G4, LINK G2) do not apply to this project. In addition, this project does not involve ski areas, winter recreation areas, mineral and energy development, or upgrading unpaved roads to maintenance levels 4 or 5, so Guidelines HU G1-G2, G4-G6, G10, and G12 do not apply. Consequently, the Camp Robin proposed action would be consistent with these Guidelines.

Cumulative Effects

As discussed above, a substantial portion (nearly 10 percent) of the Round Prairie LAU is in non-federal ownership. However, all but about 960 of these acres are at low (below 4,000 feet) elevation or are non-forested areas in Round Prairie, and do not provide lynx habitat. Assuming all of the 960 acres above 4,000 feet elevation are lynx habitat (an overestimate since most of these are on a south-facing slopes that may contain pockets of dry forest or secondary habitat more than 200 meters from boreal forest), a conservative habitat approach assumes all 960 acres to be perpetually in a stand initiation stage not yet providing winter snowshoe hare habitat. The addition of this to the amounts of lynx habitat in this stage currently existing on NFS lands or being generated by ongoing activities in the LAU would be insufficient to exceed the allowable 30 percent directed by Standard VEG S1 of the NRLMD (private activities do not count toward VEG S2).

A busy highway (State Highway 95) and linear opening traverse the length of Round Prairie, and effectively separate the LAU into two "islands" of boreal habitat. It is possible that SH95 (and/or the low-elevation non-forested lands it crosses) limit lynx movement through the LAU – potentially isolating the northern portion of the Camp Robin Project area from lynx populations elsewhere in the Purcell Range. However, the incidental capture of a young female lynx in the Camp Nine area (south of Brush Creek drainage) by a licensed trapper in 2012 lends evidence that lynx are still able to access this portion of the LAU.

Determination of Effect

The Camp Robin Project would be consistent with all standards and guidelines in the NRLMD (see above). Actions would not result in greater than 30 percent of lynx habitat in the Round Prairie LAU being in the stand initiation structural stage not yet providing winter snowshoe hare habitat, and not more than 15 percent of lynx habitat in on NFS lands in the LAU would have been regenerated within a ten-year period. There is no pre-commercial thinning in lynx habitat. No mature multi-story or late successional stands would receive vegetation treatments.

Vegetation management on approximately 15 acres of lynx habitat and about 1,006 acres of non-lynx habitat within the Round Prairie LAU, 4,359 acres of additional vegetation treatments outside the LAU, road reconstruction and storage, non-motorized trail creation, and fuels treatments (machine piling and underburning), would make minor modifications to lynx habitat and would not disturb or displace resident lynx at a level that would result in mortality or significantly disrupt behavioral patterns such as breeding, feeding or sheltering. Consequently, these activities may affect, but are not likely to adversely affect Canada lynx. There is no designated Canada lynx critical habitat within the action area; therefore, the project would have no effect on designated critical habitat.

Grizzly Bear

Summary of Effects

The proposed project would temporarily increase linear road miles during project implementation but

would reduce linear road miles long term in the Mission-Moyie BORZ area. The Camp Robin proposed action has the potential to cause disturbance or temporary displacement of grizzly bears if they are present in the activity area during project implementation. However, project activities would not take place during the spring bear season, which is the most sensitive time period for grizzly bears, with the possible exception of prescribed burning. Also, vegetation treatment activities would occur in phases to minimize disturbance to grizzly bears and provide undisturbed temporary displacement habitat. Although short-term impacts may occur (during implementation), long-term improvements to grizzly bear forage in the BORZ would be realized (after 8-10 years). Even with the proposed regeneration treatments, hiding cover would remain on at least 80 percent of the BORZ area (sapling-sized or larger timber).

The Camp Robin Project proposal would be consistent with design elements in the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones (Access Amendment) (USDA Forest Service. 2011) and the revised Land Management Plan (USDA Forest Service 2015). Based on the analysis, review of best scientific information, and consistency with the Access Amendment, this proposal may affect, but is not likely to adversely affect grizzly bear.

Habitat Relationships and Affected Environment

Populations of grizzly bears persist in those areas where large expanses of relatively secure habitat exist and where human-caused mortality is low. Grizzly bears are considered habitat generalists, using a broad spectrum of habitats. Use patterns are usually dictated by food distribution and availability combined with a secure environment. Grizzlies commonly choose grass/forb and mesic timbered sites during the spring, grass/forb and shrubfield sites during the summer, and more xeric timbered sites during fall (Volsen 1994). While characteristics of denning habitat can be variable across different portions of grizzly bear range, they appear to select for physical (soil and topographic features) rather than vegetative characteristics (Aune and Kasworm 1989). Common features of denning habitat are higher elevations (greater snow cover), convex landtypes often on steeper slopes (drier soil conditions), and an absence of roads, trails and other forms of human disturbance.

Grizzly bears are opportunistic feeders and will prey or scavenge on almost any available food. Plants with high crude protein content and animal matter are important food items. The search for food has a prime influence on grizzly bear movements. Upon emergence from the den grizzlies move to lower elevations, drainage bottoms, avalanche chutes, and ungulate winter ranges where their food requirements can be met. Throughout spring and early summer grizzlies follow plant phenology back to higher elevations. In late summer and fall, there is a transition to fruit and nut sources, as well as herbaceous materials. This is a general pattern, however; bears will go where they can meet their food requirements (USDI Fish and Wildlife Service 1993).

Grizzly bear habitat across the region is often described in terms of the availability of large tracts of relatively undisturbed land that provide some level of security from human depredation and competitive use of habitat by humans (including roading, logging, grazing and recreation) (USDI Fish and Wildlife Service 1993). The Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993) indicates that the most important element in grizzly bear recovery is securing adequate effective habitat. This is a reflection of an area's ability to support grizzly bears based on the quality of the habitat and the type/amount of human disturbance imposed on the area. Controlling and directing motorized access is one of the most important tools in achieving habitat effectiveness and managing grizzly bear recovery (USDI Fish and Wildlife Service 1993).

The historic range of the grizzly bear once included most of the continental United States west from the Great Plains, but widespread reductions in range and population numbers led to the grizzly bear being listed as threatened under the ESA in 1975. Today, it is confined to less than two percent of its former

range and is represented in five or six population centers south of Canada, including the Cabinet-Yaak and Selkirk Ecosystems that are located in northeastern Washington, northern Idaho and northwestern Montana. Habitat loss and direct and indirect human-caused mortality are related to its decline (USDI Fish and Wildlife Service 1993).

It was recognized at the time of the 1993 Recovery Plan update that grizzly bear presence would occur outside the recovery zones (USDI Fish and Wildlife Service 1993). More recently, credible observations of grizzly bears and radio-telemetry research data on collared grizzly bears have documented use in specific areas outside of existing recovery zone boundaries. While observation data is limited and these habitats have not been evaluated to determine if they are of significant biological value, ongoing and future land management activities in these areas have the potential to affect grizzly bears. These areas – subsequently termed "Bears Outside Recovery Zone" (BORZ) areas – were incorporated into amendments (referred to as the "Access Amendment") to the Kootenai, Idaho Panhandle, and Lolo National Forest Plans (USDA Forest Service 2011). Approximately seventy-one percent of the 42,279-acre Camp Robin Project Area lies within the Mission-Moyie BORZ area (approximately 87,175 acres) adjacent to the Cabinet- Yaak Recovery Zone (figure 6). The process for selecting and delineating the boundaries of this BORZ area is described in Allen (2011).

Between 1994 and 2009, 28 credible sightings of grizzly bears were documented in the Mission-Moyie BORZ area, including two instances of sows with cubs (Allen 2011). Most of these sightings come from the Mission Creek and Round Prairie Creek (including Hellroaring Creek) portions of the BORZ area, with only occasional sightings from more southerly portions along the Moyie River. Allen (2011) reports one grizzly bear mortality occurring on National Forest System lands in the Mission-Moyie BORZ area during 1984. This mortality was due to a hunter mistakenly identifying a grizzly bear as a black bear (Kasworm et al. 2017). Additionally, in the spring of 2012 a grizzly sow and her cub were found dead of gunshot wounds adjacent to an open road on private timberlands on the Hall Mountain (north of Round Prairie) portion of the BORZ area.

As described in Allen (2011), an interagency team developed a process to consistently identify areas of occupied grizzly bear habitats which involves examining credible sightings of grizzly bears outside of recovery zones. Specifically, delineation was generally based on three or more credible observations, with females with cubs weighted more heavily, within individual 6th order watershed Hydrologic Unit Codes (HUCs). This methodology allowed for future expansion in the overall size of the BORZ if adjacent 6th order HUCs experienced repeated visitation by grizzly bears (ibid). Each year, sightings, tracks, mortality, or captures documented within the area around the Cabinet-Yaak and Selkirk Recovery Zones are reviewed by a team of biologists to determine credibility of the data and if it meets the criteria needed for expansion of the BORZ.

On March 10th, 2016, credible grizzly bear sighting data from 2010 through 2015 was reviewed and it was determined that there were enough credible sightings to warrant expansion of the Mission-Moyie BORZ (USDA and USDI, 2016). New observation data came from the following sub-watersheds: Brush Creek-Kootenai River, Rock Creek-Kootenai River, Meadow Creek, Deer Creek, and Skin Creek (table 7). The Skin Creek sow with young were located just north of Goat Mountain (Lyndaker, personal communication). Telemetry data (Kasworm et al. 2017) show a sow with young in the Deer Creek drainage south of Mill Creek. A description of the Mission-Moyie BORZ expansion boundary can be found in the Cabinet-Yaak/Selkirk Grizzly Bear Recovery Zones 2016 Annual Monitoring Summary Report, Idaho Panhandle National Forests (USDA 2017).

Additional sightings recorded within the Mission-Moyie BORZ since 2009 include a sow with cubs reported to Idaho Fish and Game from Border Patrol in April 2010, a sow with young in June 2014 near the Canadian border in Brass Creek and a mortality of a sow and cub in the Hall Mountain area in May 2012.

Table 7 Credible Grizzly Bear sightings 2010-2015 prompting BORZ expansion[1]

HUC	Year – Sighting Data
Brush Cr./Kootenai R.	2015 – 3 males; 1 male denned
Rock Cr./Kootenai R.	2015 – 3 males
Meadow Cr.	2015 – 3 males
Deer Cr.	2015 – Sub-adult female; Female w/yearlings; at least 2 adults
Skin Cr.	2015 – Female w/yearlings, sub-adult male, adult male

[1]Data taken from USDA and USDI (2016) which used data from IDFG, USFS, and FWS databases.

Interagency review of the 2017 data for the BORZ areas has not been completed as of the end of May 2018 to determine if additional credible sightings warrant further expansion of the BORZ (USDA Forest Service 2018b).

Monitoring flights by Kasworm in 2010 through 2016 in the Cabinet-Yaak ecosystem have documented use by at least seven individual male bears and one female (bear 810) within portions of the Mission-Moyie BORZ area (Kasworm et al. 2017). Of these monitored grizzly bears, 3 males had estimated life ranges that overlapped portions of the Camp Robin Project area during 2014 to 2016. Kasworm indicated there is at least one other subadult male that used the Mission-Moyie BORZ in 2017 and a two year old male passed through the northern portion of the Camp Robin Project area in May 2018 (email communications, 2018). Telemetry data has not documented any females within the Camp Robin project area. As noted above, the 2010 sighting by Border Patrol of a sow with cubs is the only documentation we have of female use within the Camp Robin Project area. Monitoring data by Kasworm et al. (2017) and Kasworm (email communication 2018) show these bears have utilized large areas that extend beyond the Camp Robin Project boundary and even the Mission-Moyie BORZ boundary. The average life range for female and male grizzly bears monitored in the Cabinet-Yaak was approximately 246 mi^2 and 745 mi^2, respectively (Kasworm et al. 2017).

Since the original draft of this biological assessment the Cabinet-Yaak Grizzly Bear Recovery Area 2017 Research and Monitoring Progress Report (Kasworm et al. 2018) has been finalized. The 2017 telemetry data provided the following additional information:

- Male bear 807 utilized the area in the Hall Mountain vicinity again, and expanded use to the north into Canada north of the Camp Robin Project area.
- Male bear 922 estimated life range polygon has greatly expanded and overlaps the Camp Robin Project area north of Highway 95. Telemetry locations south and east of Highway 95 are within the Camp Robin Project area.
- Female bear 1026 estimated life range polygon overlaps the Camp Robin Project area north of Highway 95, however, telemetry points do not place her within the Camp Robin Project area, but place her across the Canadian border north of the project area.

The Access Amendment quantified the nature and amount of motorized access in these BORZ areas in order to discuss the potential impacts to grizzly bears. Through the Endangered Species Act Section 7 consultation process, the affected national forests and U.S. Fish and Wildlife Service agreed to define motorized use in BORZ areas using linear miles of open and total roads, as they are more easily communicated and monitored than road densities (and small changes in linear road miles could easily be obscured when measuring road densities over large areas). Additionally, while external boundaries were drawn to intentionally exclude non-federal ownerships whenever possible, some BORZ areas (as

delineated) contain substantial private or other inholdings. Because the Forest Service has no control over development of adjacent private lands (and grizzly bear presence on many of these lands may not be encouraged due to the potential for grizzly bear-human conflicts and subsequent bear mortality), measuring road miles across an entire BORZ area would not necessarily be an accurate reflection of the effects of National Forest management on grizzly bears. Consequently, the Access Amendment direction for the affected Forests is for no increases in permanent linear miles of open road and no net permanent increases in linear miles of total roads on National Forest System lands within individual BORZ areas above the baseline conditions identified at that time (USDA Forest Service 2011). Prior to the expansion of the Mission Moyie BORZ in 2016, the 2010 total and open baseline linear miles on NFS was reported as 200.3 and 167.3, respectively. In 2016, after the expansion of the BORZ based on recurring use through Bear Year 2015 monitoring season, the total and open linear miles of road were reported as approximately 272 miles and 240 miles, respectively. These mileages were subsequently updated to reflect small corrections to the baseline conditions, resulting in 271.7 total linear miles of road and 239.7 open linear miles of road in 2017. These mileages became the "new baseline" for the Mission Moyie BORZ and reflected the road conditions from 2015 since the expansion was based on documented bear use of the area prior to, and including the 2015 Bear Year, when these roads were present on the landscape. The existing road condition in 2016 changed (improved) from baseline with the implementation of about 3 miles of open road storage authorized by the Mission-Brush Record of Decision (ROD) (table 8).

Table 8 Annual reporting of BORZ linear miles of roads

Condition Year	Total Size (Acres)	NFS Lands (Acres)	Total Linear Miles of Roads on NFS Lands Baseline/Existing	Open Linear Miles of Roads on NFS Lands Baseline/Existing
2010	71,545	58,472	200.3/200.3	167.3/167.3
2011	71,545	58,472	200.3/200.3	167.3/167.3
2012	71,545	58,472	200.3/200.3	167.3/167.3
2013	71,545	58,472	200.3/200.3	167.3/167.3
2014	71,545	58,472	200.3/200.3	167.3/167.3
2015	71,545	58,472	200.3/200.3	167.3/167.3
2016	100,225	87,175	272/268.7	240/236.7
2017	100,225	87,175	271.7/268.7	239.7/236.7

The 2018 condition of the Mission-Moyie BORZ area, although not yet reported in an annual monitoring report, is 268.9 linear miles of total roads, including 236.9 miles of open roads, on NFS lands. This condition is changed slightly from what was in the 2017 monitoring summary report (USDA Forest Service 2018b) due to some mapping corrections. An additional open road segment (NFS road 449B; about 0.2 mile) was identified during the transportation analysis process (TAPs) for Camp Robin after the submission deadline for the 2017 monitoring summary report (USDA Forest Service 2018b). This will result in a slight discrepancy between those numbers reported for 2017 and the existing condition reported here. Conditions on the ground from 2016 to 2018 have not changed although there are existing project decisions that would reduce linear road miles in the Mission-Moyie BORZ once they are fully implemented (Hellroaring, Deer Creek, and Kriest Creek).

Direct and Indirect Effects

The Camp Robin Project proposes to place approximately 4.7 miles of open roads, and 0.7 miles of currently restricted roads, into storage (table 9, figure 3). However, two small segments of new system roads will be added (397E and 2547 UD) totaling 0.25 mile. The net decrease of open and total linear road miles, taking into consideration all access management changes occurring within the Mission-Moyie BORZ from, is about 4.4 miles and 5.1 miles, respectively (table 9). Roads that are placed into storage are unavailable for vehicular use (including maintenance) for a minimum of 10 years, and are no longer counted toward linear road miles for purposes of grizzly bear habitat assessment per direction from the

Interagency Grizzly Bear Committee (IGBC 1986, 1998) and Fish and Wildlife Service (USDI Fish and Wildlife Service 2011). Storage is designed to render these road segments undrivable, but also hydrologically inert, by installing waterbars along the full length of affected roads, removing drainage structures (culverts), and fully recontouring specific sections. While these roads would not be accessible during the "stored" period, they would remain on the system if needed for emergency[1] purposes.

The project would reduce linear total road miles in the Mission-Moyie BORZ area by 5.1 miles (to 263.8 miles) and linear open roads by 4.4 miles (to 232.5 miles). However, it is important to note that 2.6 miles of currently closed or undetermined, non-system roads are being added to the system as motorized trails, so the actual reduction of all total and open motorized routes would be 2.5 miles and 1.8 miles, respectively. Of these 4.4 miles of open roads, approximately 1.9 miles would be stored prior to, or concurrent with adding motorized trails to the NFS trail system (see Conservations Measures section). The remaining open and gated roads to be stored would be maintained or reconstructed and utilized for project activities prior to long-term storage. These roads will be stored immediately upon completion of activities that require the use of these roads.

Storing roads, particularly those that are not within close proximity to open roads is expected to increase secure habitat for grizzly bears, which, in turn would be beneficial to grizzly bears. Decreasing linear miles of open and total roads would potentially decrease two major negative impacts on grizzly bears: mortality along roads due to habituation and increased vulnerability and avoidance of habitat due to the presence of roads, associated vehicle noise, and human activity. Removal of drainage structures and stream channel restoration associated with road storage would be accomplished using large equipment and could disturb bears in the vicinity. As with any source of disturbance, many factors can influence a bear's reaction, including distance from the noise, noise level, topography, vegetative cover where the bear is located, and previous exposure to human noises. Implementation of the required conservation measures that restrict activities temporally and geographically would reduce potential impacts.

Temporary road construction may cause some level of disturbance to bears should they be within the immediate vicinity during construction and subsequent harvest related haul and decommissioning activities immediately following project activities requiring access. The small amount of ground disturbance (just over 25 acres) is very small compared to home range sizes and would provide some forage benefits within approximately 10 years. Temporary roads are distributed across the project area within the BORZ and construction would occur within phases that are geographically and temporally separated. This would help to minimize potential disturbance associated with this action. Displacement habitat is available for bears to move to. Temporary road constructions would meet the Design Features described in the Access Amendment and subsequent Biological Opinion on the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Idaho Panhandle, and Lolo National Forests (USDI Fish and Wildlife Service, 2011).

[1] "Emergencies" as defined by Endangered Species Act regulations [50 CFR 402.05] and associated policy and handbook direction

Table 9 Proposed access management changes by road number in the Mission-Moyie BORZ

Road Number	Miles	Current Status	Proposed Status
2504	1.16[1]	Season restriction; Open during bear year	Maintain then Store
397E	0.72	Open yearlong	Maintain then Store
2547B	0.79	Open yearlong	Reconstruct then Store
2272	0.1[2]	Open yearlong	Reconstruct then Store
2547A	0.64	Open yearlong	Store
2491A	0.65	Open yearlong	Store
2491C	0.36	Open yearlong	Store
2497	0.27	Open yearlong	Store
Total Open Drivable roads to Store	**4.69**		
941	0.7	Restricted yearlong	Reconstruct then Store
Total Restricted Drivable road to Store	**0.7**		
Total Open and Restricted Drivable roads to Store	**5.39**		
2271	1.1	Closed; Impassable	Reconstruct then Store
2272	0.8	Closed; Impassable	Reconstruct then Store
2573	1.0	Closed yearlong w/Barrier; Impassable	Reconstruct then Store
2573B	0.38	Closed yearlong w/Barrier; Impassable	Reconstruct then Store
2504	0.2	Impassable	Reconstruct then Store
2573D	0.8	Closed yearlong w/Barrier; Impassable	Reconstruct then Store
2573F	0.65	Closed yearlong w/Barrier; Impassable	Reconstruct then Store
Total Closed roads to Use then Store	**4.93**		
2547UD	0.1	Closed Non-System Road	Add to System and Leave Open
397E	0.15	Closed Non-System Road	Add to System and Leave Open
Total Closed roads to Add and Leave Open	**0.25**		
397CUA	1.1	Closed Non-System Road	Add to System, Use, then Store
Total Closed roads to Add then Store	**1.1**		
2494UB	1.1	Undetermined-Non-System; Potential Unauthorized Use	Decommission – Not Needed for Project
2494UD	1.0	Undetermined-Non-System; Potential Unauthorized Use	Decommission – Not Needed for Project
Total Non-System Road to Decommission	**2.1**		
2491	0.8	Stored System Road	Convert to Motorized Trail
2491D	0.7	Stored System Road	Convert to Motorized Trail

2491AUA	0.5	Closed Non-System Road	Convert to Motorized Trail
940UA	0.6	Closed Non-System Road	Convert to Motorized Trail
Total Motorized Trail Additions	**2.6**[1]		

[1]GIS miles differ slightly between the infra database and the layer used for tracking BORZ roads.
[2]The BORZ road layer used in the analysis shows the first 0.1 mile as drivable.

Timber harvest has potential to disturb or displace grizzly bears that may occasionally use the project area. Within the BORZ, proposed harvest includes 4,350 acres of either ground based/skyline systems or 395 acres of helicopter yarding (table 10). All timber harvest, road reconstruction, temporary road construction, road storage and decommissioning, grapple piling and slashing activities would take place outside of the grizzly bear spring season (April 1 – June 15), which is considered to be the most sensitive time period for grizzly bears (see "Conservation Measures"). The preferred method is to burn during the fall months if an acceptable burning window is available. However, due to air quality constraints it may be necessary to burn during the spring.

Table 10 Camp Robin Project Area (PA) logging system summary

Logging System	Acres in PA	Acres in BORZ
Ground Based	3,020	3,020
Skyline	347	347
Combination	80	80
Log Forwarder	1,048	903
Helicopter	395	395
Total	**4,890**	**4,745**

The Camp Robin project includes approximately 395 acres of helicopter-yarding of harvested material (Units 101, 103, 104, 107, and 108). Approximately 119 of these acres have a regeneration harvest prescription, 13 acres are a variable density thinning, and the remaining 263 acres consisting an improvement harvest. Helicopter logging is considered to be more intrusive to wildlife than ground-based harvest systems, as the main source of disturbance is some distance off the ground (making it audible at greater range), and helicopter use may be nearly continuous during daylight hours for portions of the operating season, as would, in general, be the case in Camp Robin. It is generally agreed upon that low-altitude helicopter flights (less than 500 meters above ground level) with or without landings may affect grizzly bears (USDA Forest Service and USDI Fish and Wildlife Service 2009). Helicopter use in grizzly bear habitat could have potential impacts to individual bears ranging from behavioral changes (such as displacement to areas away from the disturbance) to physiological changes, (increased heart rates and stress) (Larkin 1996, Reynolds et al. 1986). There is wide variability in the reaction of grizzly bears to aircraft disturbances (IGBC 1987). Factors influencing how a particular bear may react to aircraft include the availability of escape cover, the topography of the landscape, the degree of habituation to aircraft, and the type, noise level, altitude above ground, flight path and distance away from the aircraft (USDI National Park Service 2003).

However, helicopters do not pose the same long-term displacement effects and increased mortality risk to grizzly bears that are associated with permanent landscape features such as roads. The use of helicopters is transitory and does not bring additional human use and public access into grizzly bear habitat, whereas roads are generally longer term or permanent features on the landscape that do facilitate human access (USDA Forest Service and USDI Fish and Wildlife Service 2009).

Approximately 58% (229 acres) of the proposed helicopter units in Camp Robin are within 500 meters of an open road. The remaining 166 acres are "sandwiched" in between the harvest units along Gillon Creek and the units upslope toward a main ridgeline (figure 7). Five hundred meters is significant because it is a distance within which motorized routes have been demonstrated to reduce grizzly bear use of habitat (first reported by Aune and Kasworm 1989).

The value of the BORZ areas to grizzly bears is currently unknown, since no assessment of seasonal habitat availability has yet been completed. Forest cover has been found to influence grizzly bear habitat selection (Apps et al. 2004, Nielsen et al. 2004, Proctor and Kasworm 2017, unpublished paper). Proctor and Kasworm's (2017) preliminary habitat modeling for the area in the vicinity of the helicopter units shows a range of medium to very high predicted spring use, with the majority of the area in the "high" use category (figure 8). Although these researchers indicate that the models for this area (international Yaak) were less predictive for spring and fall than models for other areas, the spring results make sense as this area is generally south/southwest facing slopes that likely provide opportunities for spring season forage during the early green-up period. The only sighting of a sow with cubs within the Camp Robin Project area was documented within this vicinity during April of 2010 by a border patrol agent. The helicopter units are generally characterized by steep, dry-site habitat conditions associated with Douglas-fir, ponderosa pine forest types, and as such, would generally lose their "greenness" once the summer warm weather conditions roll in. These south/southwest facing slopes commonly have an oceanspray and ninebark shrub component and vegetation tends to dry out as summer progresses. Habitat evaluations conducted by USFS wildlife technicians within the helicopter units confirm the presence of these shrub species and make no mention of huckleberry or other preferred forage species. Proctor and Kasworm's (2017) summer ("berry season") habitat use model appears to reflect this lack of high quality forage, showing low use within the majority of the helicopter units and primarily medium use in Unit 4 upslope (figure 9). Habitat evaluations did identify huckleberry shrubs within Unit 4. The fall season model predicted use similar to the spring model (figure 10), however observation data do not corroborate female use in these area. There has been no telemetry data that shows female use within the area during any of the non-denning seasons. Nor are we aware of any known dens within the project area. Potential denning habitat likely exists on the north sides of Mission and Harvey Mountains (Lyndaker, personal communication). Although we cannot completely rule out a female grizzly bear using or traveling through the area, what we do know is that there has only been one sighting and that was during the spring season in 2010.

Habitat models developed by Proctor and Kasworm (2017) were dominated by greater than expected use for canopy openness and high level of greenness and less than expected use of high road densities. These models do show areas outside of the project area that would have predicted medium to high use that bears could use as displacement habitat (figures 8-10). Canopy openness is a predictor of huckleberry patches (Proctor and Kasworm, 2017 unpublished report). Based on tree canopy data generated from the Regional VMap database, the majority of the helicopter units show a relatively closed canopy condition (≥60%) which may not provide continuous quality foraging habitat (figure 11). Habitat evaluations recorded canopy closures ranging from 35-65% and understory vegetation ranging from depauperate to relatively brushy conditions. The VMap query for treecanopy condition shows there are pockets of more open habitat outside of the proposed units that grizzly bears may utilize for foraging if displaced from activity areas (figure 11). Areas where sun can reach the forest floor generally have greater amounts of forage species in the understory. Nielsen et al. (2004) found the use of clearcuts by grizzly bears was greatest during the mid-summer period when green herbaceous and ant feeding was at its greatest. In addition,

looking at stand year of origin within the Forest Service Vegetation database (FSVeg) about 18 percent (about 16,000 acres) of the BORZ area has a stand age of 11 through 46 years (figure 12). Nielsen et al. (2004) found that the age of a clearcut was also an important predictor of grizzly bear use and that intermediate-age stands (~30 years) were most selected during hypophagia, while recent and old (up to 46 years) clearcuts were selected more than intermediate-aged stands during late hyperphagia (a condition of compulsive eating). It would be reasonable to assume that these open, relatively young harvested stands within the Mission-Moyie BORZ area would provide foraging opportunities should a grizzly bear be displaced during project activities, including helicopter use.

Kasworm et al. (2017) radio telemetry location data and minimum convex life range estimates of grizzly bears that traversed the Camp Robin Project area showed that bears (males) did "voluntarily" utilize habitat to the north, west, south, and east of the project area. Given the habitat discussion above, the known extended travel documented through radio telemetry, and the large average home range (life range) size for grizzly bears, it would be unlikely that bears displaced from the project area would be unable to locate alternative foraging resources and that the scale of this project would significantly impair or disrupt normal behavior patterns. Kasworm (personal communication, 2018) indicated that he would find it hard to imagine that the helicopter harvest activities of this magnitude, given the site specific conditions, would have a major effect on a sow with cubs. Kasworm (personal communication, 2018) indicated that a female home range may be as large as 660 km^2 (255 mi^2) and even though sows with cubs typically have the smallest average home ranges, it would still be a relatively large area compared to the size of the helicopter units and associated potential half mile disturbance buffer. For example, if a female's home range is as small as 200 mi^2, the helicopter units would equate to less than 0.32% (395 acres) of a home range and the total potential disturbance influence out as far as ½ mile from the helicopter units would impact less than 5% of her home range area. In the helicopter proposal area the evidence indicates that bears are not likely going to be there during the timeframe that helicopters are flying (summer, fall, and potentially winter). There is only one documented sighting of a female with cubs from 2010 and that was in the spring time, the season when no helicopter or other harvest activities would be occurring. In addition, in the unlikely case that a female with cubs is in the area, since helicopter activities would start low and move slowly uphill, bears would be able to move away from the disturbance. There is displacement habitat to the west, north into Canada, and specifically, to the east, a ridgeline exists that a bear can travel beyond to avoid the disturbance (Kasworm, personal communication 2018). Causing a sow with cubs to move in this manor would not be expected to adversely affect her. The impacts would be discountable.

Project design features separate harvest activities into phases which differ in space and time (see the Conservation Measures section). Helicopter harvest activities in Phase 1 would be completed prior to Phase 2, and Phase 1, Phase 2 and Phase 3 would not occur within the same bear year. If grizzly bears are present at the onset of activities in a particular Phase, there is ample area for bears to retreat to that would reduce disturbance stress and allow them to continue normal behavioral patterns. It is possible that bears in BORZ may have developed strategies to allow them to meet their needs in spite of elevated road densities and potential disturbance so bears moving away from the helicopter activities would be expected to find acceptable foraging habitat elsewhere, even in roaded areas, without incurring much physiological cost.

Helicopter harvest landings would be located downslope of the units (towards Gillon Creek) in Phase 2, which is an area that is already roaded and has a fair amount of human related disturbance potential due to private ownership and recreational use, given the proximity to Robinson Lake. It would be reasonable to assume there may be an existing level of disturbance that keeps some bears away or could displace a bear from that area during periods of coincidental human/bear presence. Looking at monitoring data from Kasworm et al. (2017), there have been at least seven separate individual bears that have been documented within the Mission-Moyie BORZ area from 2010 through 2016, however six of those bears had the vast majority of their estimated life range falling outside of the BORZ area. Additional monitoring data indicated that at least two other bears have been documented within this BORZ in 2017 and 2018

(Kasworm 2018 email communications). Of the nine known individual bears monitored from 2014 through 2018 documented within the BORZ, four have utilized the Camp Robin Project area to some degree, three of which have utilized habitat north of U.S. Highway 95 in the vicinity of proposed units. The vast majority of the estimated life range of the three bears documented within the Camp Robin Project area in the past 10 years falls outside of the area. Radio telemetry locations from 2006 to 2007 indicated that two males utilized habitat within the Camp Robin Project area. The Forest NRIS Wildlife database identified three documented observations: a single bear on the road west of Camp Robin Unit 102 in 6/1986, a single bear in Camp Robin Unit 33 in 9/1997, and a sow with 2 cubs on the road west of Camp Robin Unit 4 in 4/2010. It's clear that grizzly bears occasionally utilize the Camp Robin Project area, although the quality or seasonality of this habitat is currently unknown and use, based on the radio telemetry locations from the past 10 years, does not appear to concentrate within the Camp Robin Project area.

Vegetationally, the proposed helicopter harvest areas are primarily canopied, medium-to-large diameter (10-15" and >15" dbh) conifer stands with generally low amounts of preferred forage species. Habitat evaluations conducted north of Highway 95 identified 3 stands, out of 25 reviewed, as having some amount of huckleberry presence. The majority of these stands had a mix of ninebark and oceanspray with some grass and forbs. As such, they are not particularly attractive foraging areas, particularly during the late summer huckleberry season. While their use cannot be entirely ruled out, the current vegetation condition within these stands may explain, at least in part, why grizzly bear use doesn't appear to be concentrated within the project area and would add credence to the supposition that use may be more of a transient nature.

If a grizzly bear is present during the helicopter operations, or other ground-based or skyline harvest operations, it is likely going to be displaced from the immediate vicinity. Considering the above discussions regarding potential forage availability in displacement habitat both inside and outside of the project area, existing vegetation condition within the proposed units, and conservation measures that minimize the timing and extent of potential disturbance, harvest activities are not expected to significantly disrupt normal behavioral patterns, and the likelihood of adverse effects to grizzly bears is very small.

Approximately 3,173 acres of the Camp Robin Project Area would be regeneration harvested (seedtree, shelterwood, or clearcut), and about 2,487 acres treated by intermediate harvest systems (table 11). Variable density thin treatments would create small openings, while regeneration harvest would produce open conditions in treated stands. The long-term (post implementation) effect of both is a temporary reduction of forest cover and increase of foraging habitat. Grizzly bear forage would increase from both plant (increased abundance of palatable plants from more sunlight reaching the forest floor) and animal (higher numbers of animals that can be preyed upon or scavenged due to improvements in ungulate forage quantity and quality) sources. Cover would be reduced following treatment to where regeneration harvest units would no longer provide hiding cover, although hiding cover would likely remain to some extent in variable density thin units. However, hiding cover (sapling-sized or larger timber) would remain in untreated stands on more than 80 percent (about 70,355 acres) of the BORZ area following project activities.

Table 11 Camp Robin Proposed Commercial Harvest within Mission-Moyie BORZ

Prescription	Acres
Regeneration Treatments	
Clearcut	10
Seedtree	1,713
Shelterwood	1,450
Total	**3,173**
Intermediate Treatments	
Variable Density Thin	13

Improvement Cut	585
Commercial Thin	937
Single Tree Selection	38
Total	**1,572**
Grand Total Commercial Harvest	**4,745**

Within about 10 years post-treatment, hiding cover is expected to return to regeneration units through growth of shrubs and young conifers. Forage plants (mainly huckleberries) are currently present in various quantities in some of the stands proposed for treatment, although at low densities or almost completely lacking in some of the lodgepole pine stands with sparse understories. Potential increase and/or rejuvenation of huckleberry shrubs in units and burned areas as a result of the proposed action is one of the more important effects to bear habitat. Huckleberries are an important food item for grizzly bears in this portion of their range (Holden et al. 2012, Zager et al. 1983). Besides the sheer volume of fruits produced by various huckleberry species, these fruits ripen during late summer and fall when bears are undergoing hyperphagia in preparation for winter dormancy. Although they may be active from April through November, most grizzly bear weight gain occurs during the late-summer/fall while they feed almost exclusively on berries (Zager et al. 1983). In areas or in years of poor huckleberry productivity, body condition of affected bears can suffer, negatively affecting survival and reproduction.

While annual berry production can be highly variable depending on climate (particularly temperature), different vegetative types and structural stages also affect huckleberry production (Martin 1983, Holden et al. 2012). Martin (1983) reports that the most productive huckleberry plots were on mesic aspects with light tree canopies, and that production on mesic aspects (northwest through east) in general was significantly higher than that of xeric aspects (southeast through west). Martin (1983) also found that sites burned by wildfires 60-100 years ago did not produce much fruit, even though mean huckleberry shrub cover was moderately high (31%). In contrast, the mean production for plots on sites burned 25-60 years ago was significantly higher. Martin (1983) concluded that conditions that retard or inhibit the development of a tree canopy should prolong the productive life of huckleberries on burned sites. Both Martin (1983) and Zager et al. (1983) agree that mature forests, particularly old growth, produce relatively low amounts of huckleberries regardless of overstory canopy cover. Zager et al. (1983) report that although grizzly bears use mature forests for escape cover, production and canopy cover of important food plants (especially fruiting shrubs) is relatively low on these sites. Instead, shrub communities, principally those at middle elevations, were identified as important producers of grizzly bear foods in northwestern Montana (Zager et al. 1983).

Timber harvest and subsequent fuels treatments within the Camp Robin Project area may temporarily inhibit berry production in treated stands where they currently exist, but are expected to result in increased berry production within 10 to 15 years after treatment.

Post-harvest fuels treatments would include approximately 1,368 acres of primarily underburning (with approximately 870 acres of a combination of whole-tree yarding and underburning) and 3,417 acres of grapple piling and whole tree yarding (table 11).

Table 11. Camp Robin Project fuels treatment summary in the Mission-Moyie BORZ

Fuels Treatment	Acres
Grapple Pile	1,574
Masticate	5
Underburn	453
Whole-Tree Yard (WTY)	1,843
WTY/Underburn	870

Prescribed burning is the only project-related activity that would be allowed during the spring season

(although fall burning would be used to the extent practicable), and would not involve further mechanized use around harvest units except for passenger vehicles driving restricted roads to provide access for burning crews. Burning harvested units could span several years (depending upon harvest schedules). Given the nature of prescribed burning and the fact that lighting these would be conducted by hand by crews on the ground, this activity is not expected to result in injury to grizzly bears even if it takes place in spring (also see the eco-burn unit discussion below). Grapple piling all or portions of harvested units could potentially be a source of disturbance to bears that may be present when these activities take place. Equipment used for piling (usually a small excavator) represents a source of mechanized disturbance off of, but in close proximity to, roads. However, piling usually takes place during the first summer/fall following harvest (so high fuel loads are not present for extended periods) – so grizzly bears are not expected to make extensive use of these areas during this activity because the area recently (during the previous 1-2 active bear seasons) had been subject to a high level of human activity associated with logging, and because recent ground disturbance from timber harvest, and logging slash on the ground, limit the amount of forage plants available to bears this first year. Burning of any given unit would take place during a single day, further reducing the possibility of a chance encounter.

This proposal also includes prescribed burning only of approximately 386 acres on the upper northwest face of Tungsten Mountain. While it is likely the area would be hand-ignited by ground crews, it is also possible that a helicopter could be used for ignition; either way, burning would be accomplished over a single day, and associated disturbance would be a temporary event. The potential effects if there was a day of helicopter use would be as described previously, except much shorter in length. The preferred method is to burn during the fall months if an acceptable burning window is available. However, due to air quality constraints it may be necessary to burn during the spring. Use of fire as a restorative tool (either wildfire or prescribed burning) is generally considered to be beneficial for grizzly bears. Fire increases ecosystem diversity and creates a greater variety of forage items over time. Grizzly bears feed on the lush revegetation of grasses and forbs that occurs relatively quickly after fire, and also on ants and other invertebrates that inhabit the dead trees that have fallen to the ground. Since bears are highly mobile and opportunistic, they are able to avoid the harmful aspects of fire (such as injury from flames or falling trees during actual burning) yet make full use of the resulting diversity of burned and unburned habitats for foraging and cover (USDI Fish and Wildlife Service 2003).

The probability of grizzly bear cubs actually being present within the proposed eco-burn unit, at the time it is burned, is of an extremely low order of magnitude. BORZ areas were identified based on repeated, infrequent sightings of grizzly bears over a number of years, as opposed to continuous occupation by this species. As mentioned above, telemetry monitoring data identified at least 9 individual grizzly bears utilizing portions of the BORZ from 2010 through 2018, however, the vast majority of the telemetry points were not within the vicinity of the proposed eco-burn unit, and we are unaware of any adult female (or cub) use of the area. By necessity, spring burning would take place before the area begins to "green up" with new spring growth (to insure lower fuel moisture), so there would be little to attract bears to this site at this time. IPNF personnel would be intermittently present in the proposed burn area several days prior to burning, and at least one reconnaissance flight would take place over the proposed eco-burn immediately prior to lighting. Any wildlife making use of these areas would likely have moved away before actual burning operations begin.

In summary, burning activities present a low risk of injury to grizzly bear and potential effects are extremely unlikely to occur as females with cubs are not expected (and have not historically been documented) in the proposed eco-burn area during the single day burning takes place. The "Guide to Effects Analysis of Helicopter Use in Grizzly Bear Habitat" (USDA Forest Service and USDI Fish and Wildlife Service 2009) characterizes "limited prescribed burning" (where the effects are relaxed almost immediately and the duration is short) by helicopter as an activity that "should not cause injury, decrease productivity, or significantly interfere with normal behavior patterns such as breeding, feeding, or sheltering." Since the potential effects of this action are insignificant and discountable, prescribed burning

in spring is not expected to have adverse effects on grizzly bears.

Vegetative changes to grizzly bear habitat from approximately 89 acres of precommercial thinning would be minor. These stands currently contain high densities of young conifers, so they do not likely provide preferred forage plants since there would be little growing space or sunlight available near the ground. Although cover would be considerably reduced by this activity, precommercially thinned stands would still contain several hundred 20-foot or taller trees per acre, and loss of cover would not be sufficient to increase sight distance (a distance at which 90 percent of a bear is hidden from view) to 100 feet or more in affected units. Treated areas would be subject to disturbance of relatively short duration, and would generally have ample displacement habitat available for bears to use. Activities would emanate from drivable roads, and would be for only a few days in any given area. Additionally, linear open or total road miles would not increase. No thinning activities would take place during the spring season.

Spraying herbicides to control and prevent noxious weeds would take place along open and restricted roads, and possibly in portions of harvest units. Treatment along open roads is unlikely to displace grizzly bears since an existing source of disturbance is already present. Noxious weed treatments on restricted roads will be accomplished in one administrative round-trip per year per road, and would also be a minor source of disturbance. Although small amounts of palatable plant species (such as huckleberry bushes) may inadvertently be affected by noxious weed treatments, this activity is not expected to considerably reduce availability of bear forage.

Recreation improvement activities that include the creation of two new trailheads that provide for safe vehicle parking, dock repair/improvements, and improvements to existing campground sanitation facilities would make inconsequential changes to habitat and have minor disturbance effects on grizzly bears. The Arndt trail (T409) is an existing single track motorized trail that currently doesn't have a safe parking facility. The proposed trailhead will repurpose an existing log landing after harvest activities are complete. Similarly, the addition of a trailhead parking facility would make inconsequential changes to habitat since the location is immediately adjacent to an open public road. The Bussard Trailhead will be expanded to allow for the safe parking and OHV off-loading activities associated with the use of the existing motorized trail system. Interpretive maps showing the legal trail system and State laws, rules and requirements will be posted in a newly created kiosk. The footprint of the parking area will be relatively small ($\leq$0.25 acre) and will be within the area of influence of an existing open road. Trailhead improvement is not expected to encourage increased use on affected trails, and the trails in question are already open to motorized traffic; therefore, mechanized improvement activities would not be easily distinguishable from normal use. Trailhead construction and conversion of road to trail would take place in already disturbed areas and would not affect vegetative components of habitat. As with timber harvest activities, none of these actions would take place during the grizzly bear spring season (see "Conservation Measures"), and would not increase the current range of motorized use in the Camp Robin Project area. Part of the purpose and need for this project is to provide off-road user groups a consolidated, clearly identified motorized trail system that provides for existing and expected future use.

Approximately 4.1 miles of new mountain bike/hiker, non-motorized trail is being proposed within the Mission-Moyie BORZ. The trail would leave from the existing non-motorized trail system at Brush Lake and gains elevation as it meanders through a section of the Purcell Mountains, between Tungsten and Bethlehem Mountains, to tie in with the existing Trail 23A. To meet the specifications of a Class 3, single lane track, approximately 2.5 acres of vegetation clearing would be required. This is a minimal loss of habitat and sections of trail would cross through closed canopied stands, many of which don't have a well-developed shrub/forb layer in the understory due to the lack of sun reaching the ground. Habitat evaluations conducted along the portions of the trail above 4,000 feet in elevation also found some scattered huckleberry brush and large openings of ceanothus.

With any trail within occupied grizzly bear habitat, there is the potential for human-bear interactions. The

effects of non-motorized human use on grizzly bears are not well documented. Grizzly bear researchers generally agree that non-motorized human presence in occupied grizzly bear habitat can diminish the value of habitat for grizzly bears through modification or displacement (summarized in Claar et al. 1999). Kasworm and Manley (1988) reported that grizzly bears used habitats within 100 meters of trails less than expected, but used habitats 100-1,000 meters from trails in proportion to availability. McLellan and Shackleton (1989) report that bears showed a stronger response to people on foot than in motor vehicles, especially in "low human-use" areas. However, less than half of bears greater than 76 meters away showed any response to stimulus (walked or ran away). Mace and Waller (1996) also reported that bear response to off-trail hikers was greater than that observed for other types of disturbances.

Presumably, mountain bikers are more likely than other non-motorized users to encounter bears (on a per capita basis) because they are quiet, move relatively fast, and cover greater distances. However, despite a recent highly-publicized incident in western Montana, injuries to mountain bikers due to encounters with grizzly bears are almost unheard of. Hikers greatly outnumber mountain bikers on most trails, and serious or fatal hiker/grizzly encounters, while also rare, occur on an almost annual basis. Although individual mountain bikers are likely at greater risk of bear encounters than other non-motorized users, this increase is impossible to quantify from existing research.

Based on the above discussion, we expect the effects to grizzly bears (both disturbance and habitat alteration) of trail improvement and creation activities to be of a very minor nature.

Outside the Mission-Moyie BORZ area, additional proposed activities include commercial thin prescriptions on about 145 acres along with road reconstruction and maintenance, armoring and stabilization of the Fry Creek channel where NFS Road 2222 crosses it, and improvements to the fishing dock at Smith Lake. We also propose to replace the vault toilet at the Smith Lake campground and implement noxious weed treatments along log haul routes. Proposed Camp Robin activity areas that are outside the BORZ area do not contain the full spectrum of seasonal grizzly bear habitats (they lack high-elevation areas that could be utilized in summer or for den sites), are heavily roaded and developed with homesites, and contain a variety of ownership patterns supporting various uses that often conflict with grizzly bear presence. While some of this area may be used by grizzly bears, this use is expected to be transient and fleeting due to the relatively poor habitat conditions and high level of human disturbance found in these areas. There is no evidence to suggest that displacement from these areas would substantially impair behavioral patterns such as breeding, feeding or sheltering. As a result, project activities in these areas would have minor effects to grizzly bears.

Relevant Design Elements from the Grizzly Bear Access Amendment are addressed as follows:

II. *The following access management applies to seven grizzly bear recurring use areas (i.e., BORZ areas) located outside of the Cabinet-Yaak Grizzly Bear Recovery Zone (KNF and IPNFs) and Selkirk Grizzly Bear Recovery Zone (IPNFs):*

A. *The Forests shall ensure no increases in permanent linear miles of open road on National Forest System lands in any individual BORZ, above the baseline conditions identified in table 26, except in cases where the Forest Service lacks discretion to prevent road building across National Forest System lands due to legal or other obligations (examples include, but are not limited to, ANILCA claims, identification of RS2477 thoroughfares).*

The Camp Robin Project would result in a net decrease (4.4 miles) of linear miles of open road in the Mission-Moyie BORZ area. Any yearlong restricted (gated) roads used for timber hauling or access for post-harvest fuel treatments would be unavailable for public use during project implementation, and would have yearlong restrictions reestablished following all project activities. Currently undrivable roads reconstructed for project activities would similarly be made unavailable for public use during implementation, and would be stored following all project activities. There

would be no permanent increase in linear miles of open road on NFS lands from this proposal. Consequently, the Camp Robin project would comply with Design Element II.A.

B. *The Forest shall ensure no net permanent increases in linear miles of total roads in any individual BORZ area above the baseline conditions identified in table 26, except in cases where the Forest Service lacks discretion to prevent road building across National Forest System lands due to legal or other obligations (examples include, but are not limited to, ANILCA claims, identification of RS2477 thoroughfares, etc.).*

The Camp Robin Project would result in a net decrease (5.1 miles) of linear miles of total road in the Mission-Moyie BORZ area. Currently undrivable roads reconstructed for project activities would be made unavailable for public use during implementation, and would be stored following all project activities. New, temporary roads (13.1 miles) constructed for project activities would also be made unavailable for public use during implementation and would be decommissioned once project activities are completed. The exception to this is the 1.5 miles of motorized trails being temporarily used for access and log haul but unavailable for public use. These segments would be returned to their pre-project condition. There would be no permanent increase in linear miles of total road on NFS lands from this proposal. Consequently, the Camp Robin project would comply with Design Element II.B.

Cumulative Effects

Ongoing harvest activities on Federal ownership that have already been consulted on will be occurring within the Mission-Moyie BORZ, however, it bears noting that activities planned in the Camp Robin Project would be geographically and/or temporally separated from activities associated with the following NEPA documents (see figures 13 and 14):

- Kriest Creek EA – Harvest activities are completed however the decommissioning and storage planned for the 2517C road has not yet been finalized. This work will not likely overlap temporally with Camp Robin activities however, in the event that they do, the 2517C spur is on the eastern side of the BORZ and are separated from the Camp Robin project by the Moyie River Corridor and the prominent north-south ridgeline from Tungsten Mountain to Wall Mountain.

- Hellroaring Creek EA – Harvest activities west of the Tungsten Mountain trail would be completed prior to the startup of Camp Robin Project activities. This excludes potential ground preparation activities including underburning, grapple piling, reforestation activities and road storage work associated with those units. Harvest of the remaining Hellroaring Project units east of the trail likely would occur during the same bear year(s) as the Camp Robin Project activities. The vast majority of the Camp Robin Project units are located adjacent to open roads or motorized trails and are therefore within the 500 meter influence of those motorized routes. Bears likely avoid these areas so the Camp Robin Project activities occurring within 500 meters of open motorized routes would not be expected to add cumulatively to other ongoing activities associated with the Hellroaring Project. The exception to this is a small portion of Camp Robin unit 43 and the eco-burn unit, both of which extend into interior secure habitat. In order to retain this area's value as secure habitat while Hellroaring harvest operations are ongoing, a winter logging conservation measure will be required for the portion of Camp Robin Unit 43 that extends beyond 500 meter of FR 397 (figure 14). In addition, implementation of the eco-burn unit would occur after the Hellroaring harvest is complete. Including these conservation measures will insure that there is ample displacement habitat available to bear that may be utilizing the activity areas. There would be no adverse cumulative disturbance effects expected in association with these activities.

- Deer Creek EA – The proposed units are separated geographically but purchaser operations may overlap temporally with Camp Robin activities. A small portion of the Deer Creek timber harvest activities are in the southeastern most portion of the BORZ and are separated from the Camp Robin project by the Moyie River corridor and more than 2 ½ miles of rugged terrain (figure 13). This separation helps minimize disturbance potential. In addition, there is ample displacement habitat in the immediate vicinity. There are approximately 1.5 miles of currently impassable roads that will be reconstructed and utilized to access the Deer Creek units within the BORZ. These roads will be closed to public access during project activities and decommissioned or stored after use. Camp Robin activities are not expected to add significantly to the ongoing disturbance in this area.

Almost four square miles of property in the Hall/Mission mountains area are private industrial timberlands. These lands are already roaded, so any future activities would probably emanate from existing roads. As a result, potential additional road building on these properties is unlikely to significantly increase linear road miles in this area; and any future timber harvest activities would originate from the existing road system. There is also substantial development in the low-elevation valleys in the Mission-Moyie BORZ area to the north and east of the project area; including highways, railroad lines, and numerous private residences. Residences (existing and future) in the area create the potential for conflicts with bears (black and grizzly) resulting from food conditioning and habituation that often leads to the removal of these bears from the population. The potential effects of this are difficult to quantify and predict. It is also possible (if not likely) that this development could inhibit grizzly bear movement to and through the BORZ area. According to USDI Fish and Wildlife Service (2011), connectivity between recovery zones will ultimately rely on actions outside of the jurisdiction of the national forests. However, sufficient hiding cover would remain on NFS lands in the Camp Robin area to allow grizzly bear movement, and the Access Amendment direction for BORZ areas is for no net permanent increase of linear road miles on NFS lands (USDA Forest Service 2011).

Determination of Effect

The Camp Robin Project would authorize timber harvest on up to 4,745 acres within the Mission-Moyie BORZ, along with road storage and decommissioning, precommercial thinning, prescribed burning, recreation improvements, and weed treatments, all of which are outside of the Cabinet-Yaak Recovery Zone. The project would reduce linear road miles in the Mission-Moyie BORZ area. While the project would result in a temporary increase in total linear road miles during implementation, this situation would not increase the risk of mortality to grizzly bears since restricted, reopened, and temporary roads used as haul routes would remain closed to the public and be used exclusively for the completion of project activities, consistent with the Access Amendment..

With the exception of the potential for prescribed burning and use of open roads, project activities would not take place during the grizzly bear spring season (April 1-June 15), a sensitive time period for grizzly bears. Following implementation, potential forage would increase and cover would be reduced. However, since hiding cover would remain on at least 80 percent of the BORZ analysis area, timber harvest at this scale is unlikely to substantially increase vulnerability or hinder movement across the landscape for large carnivores.

The Camp Robin Project is expected to result in long-term (post-implementation) improvements to grizzly bear habitat by reducing road miles and increasing forage (huckleberry) production potential on about 3,173 acres of openings created by regeneration harvest. While project activities may temporarily disturb or displace grizzly bears that are present during implementation, activities would be of relatively short duration, and impacts would be separated spatially and temporally. Female grizzly bears and sows with cubs are not likely to be utilizing the helicopter units during the summer and fall period based on the known observation and telemetry data to date. In the unlikely event that bears are present there is ample

displacement habitat with food resources available for bears to use and avoid disturbance. Project activities are not expected to significantly disrupt normal behavioral patterns. Since the potential effects during project activities are insignificant and discountable, the proposed action ***may affect***, and is ***not likely to adversely affect*** grizzly bears and their habitat.

North American Wolverine

The general categories of activities proposed for the Camp Robin Project include timber harvest, mechanical equipment use, existing gravel pit use, roads and road maintenance, silvicultural activities (precommercial thinning), recreation and associated infrastructure management, prescribed fire, watershed restoration, and weed control, in wolverine habitat. None of the types of activities in this proposal were determined to pose a threat to the species (USDI Fish and Wildlife Service 2013b). While some of these activities have the potential to affect individual wolverines or their habitat (particularly at higher elevations), the potential effects would not reach a level where they would jeopardize the continued existence of the species.

The Camp Robin project would affect approximately 47 acres of year-round wolverine habitat (persistent spring snow cover areas for at least one of seven years) within portions of two activity areas: 23 acres within the ecoburn unit and 24 acres within commercial thin Unit 4. Neither of these areas are identified as potential denning habitat (persistent spring snow cover for at least five of seven years). As a result, potential impacts to wolverine or their habitat would be discountable (small in scale) and insignificant (proposed activities are not considered to be a threat to the species).

All of the proposed activities can be placed into the broad categories of actions discussed and consulted on in the *Programmatic Biological Assessment for North American Wolverine*. The U.S Fish and Wildlife Service subsequently concurred with the determination that project activities within these categories will not jeopardize the continued existence of the DPS of the North American wolverine (USDI Fish and Wildlife Service 2014c).

CONSERVATION MEASURES

The following measures are included to remove or reduce any questionable conflicts. These measures are non-discretionary and **are necessary** to achieve the determination of effects.

Grizzly Bear

- No timber harvest, hauling on yearlong restricted roads, road reconstruction, temporary road construction, road storage, grapple piling or slashing activities would take place between April 1 and June 15, within the Mission-Moyie BORZ. Additionally, no trail creation or trailhead improvement activities would take place during these dates. Implementation of project activities would be divided into phases that are spatially and temporally separated within the Camp Robin Project area.
    - Phase 1: Harvest of Units 1, 2, 3, 5, 6, 7 would occur first. Road reconstruction and temporary road construction of FS Roads 2573UA and 2573F would occur during this phase. The exception is that Unit 3 could occur during this phase OR during Phase 2.
    - Phase 2: All helicopter units (101, 103, 104, 107 and 108) and potentially Unit 3 would be logged following the completion of Phase 1 and would be in a different bear year. The purchaser would have 3 years to complete Phase 2 operations due to the complexities associated with helicopter logging.
    - Phase 3: Unit 4 would occur after the completion of Phase 2 and would occur in a different bear year.
    - The remaining harvest units north of HWY 95 would not be restricted in their timing due to their proximity to heavily used open roads and vicinity to Robinson Lake, a much used recreational

area. This means they could be harvested before, concurrent with, or after the helicopter activities occur. However, keep in mind that contractors would not be operating in these remaining units all at the same time so there would be adjacent areas for bears to move to during the ground-based activities. Spring bear seasonal restrictions remain in place for all these phased harvest activities.
  - Phase 4: Units 34 through 45. Harvest and associated activities would be completed prior to or after Phase 5.
  - Phase 5: Units 46 through 62. Harvest and associated activities would be completed prior to or after Phase 4.
  - Phase 1, 2, or 3 could occur at the same time as Phase 4 or 5 due to their geographic separation.
- Harvest activities in the portion Unit 43 that is further than 500 meters from FR397 would occur during the winter period (12/1 through 3/31). (figure 14).
- Implementation of the eco-burn unit located within the interior secure habitat would occur after the Hellroaring Project harvest is complete (in a separate bear year).
- Creation of new motorized trail routes (OHV Trails) would occur after or concurrent with the storage of the 1.91 miles of open roads that are not needed for project implementation (2491A, 2491C, 2497, and 2547A).
- Road 397CUA will be effectively gated preventing public use and closed immediately upon completion of activities requiring use of the road. The road must be closed with a berm, guardrail or other measure that effectively prevents motorized access, and put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years.
- Temporary Roads 27, 28, and 29 (portions of motorized trails 45 and 45A) that access Unit 43, will be converted back to motorized trails immediately following completion of harvest and haul activities. These temporary roads will be gated and closed to the public during logging operations for safety concerns. Unit access for fuel treatments and planting activities would be restricted to OHV/ATV use and would occur once the temporary road was converted back to motorized trail status. Boulders, berms, or some other barrier would be placed to restrict access to OHV use only.
- Forest Service personnel, contractors and subcontractors would be given a copy of the Grizzly Bear Management and Protection Plan (Attachment A) and the Idaho Panhandle National Forests (IPNF) Food Storage Order. The National Forest System lands within the proposed action areas are covered by the IPNF Food Storage Order. The order would be included in all contracts. Compliance with the provisions of the IPNF Food Storage Order is mandatory.
- Contractors and subcontractors would not be permitted to hunt, transport hunters, discharge firearms, or transport big game animals with vehicles in any areas that are otherwise closed to motorized vehicles. Timber sale contract provision C5.41 -Closure to use by others, would be included in any timber sale contract and implemented.

FIGURES

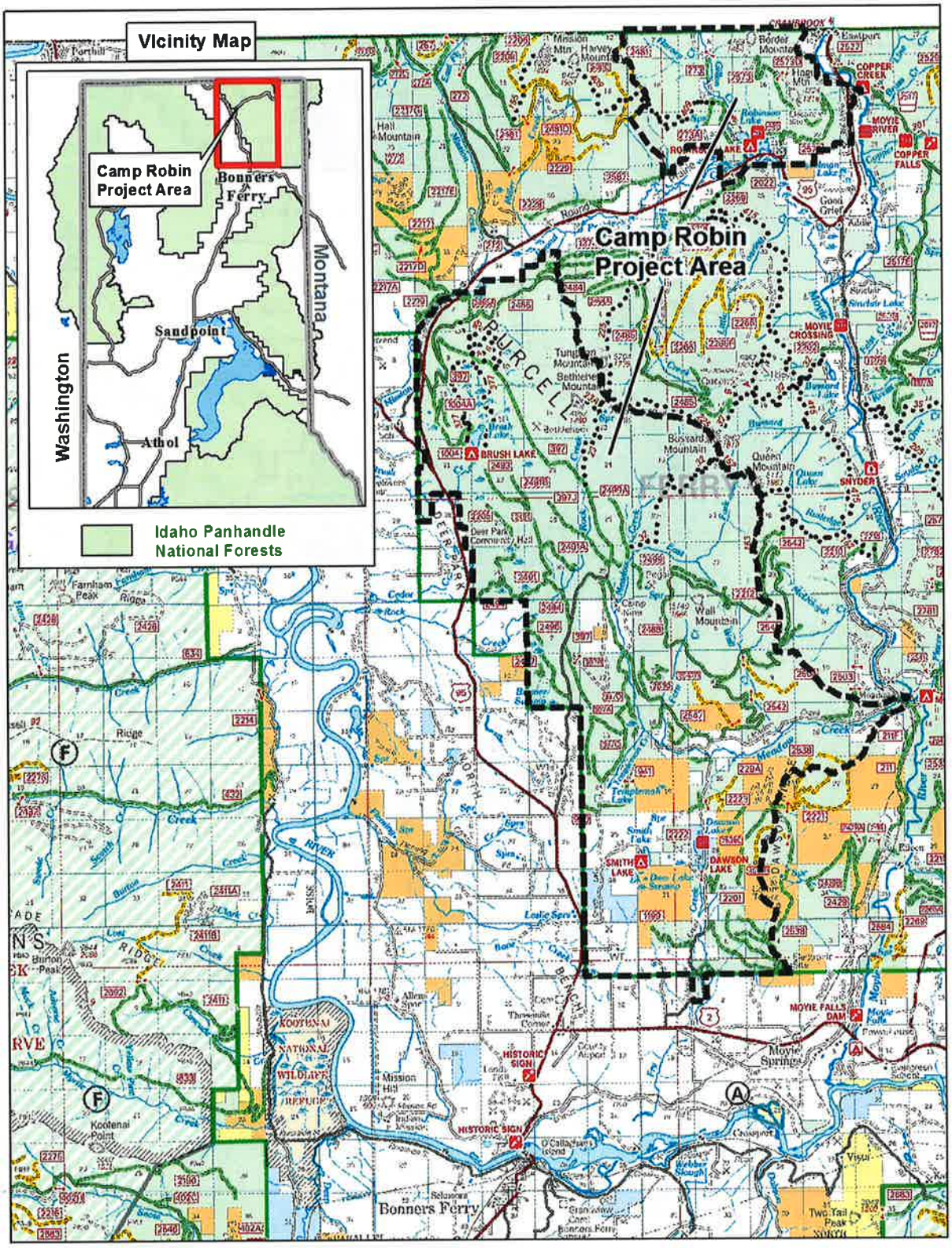

Figure 1 Camp Robin Vicinity Map

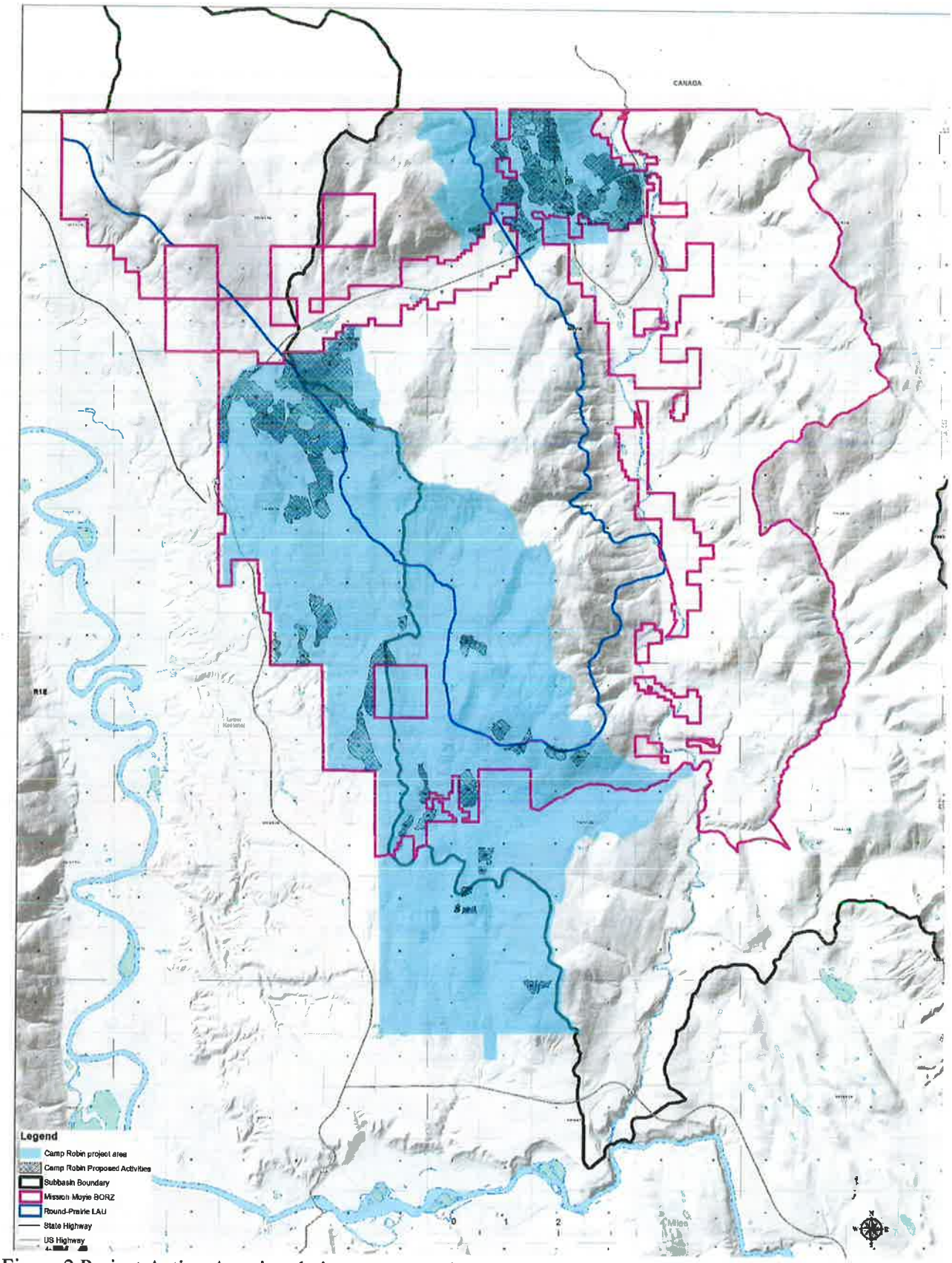

Figure 2 Project Action Area in relation to proposed activities

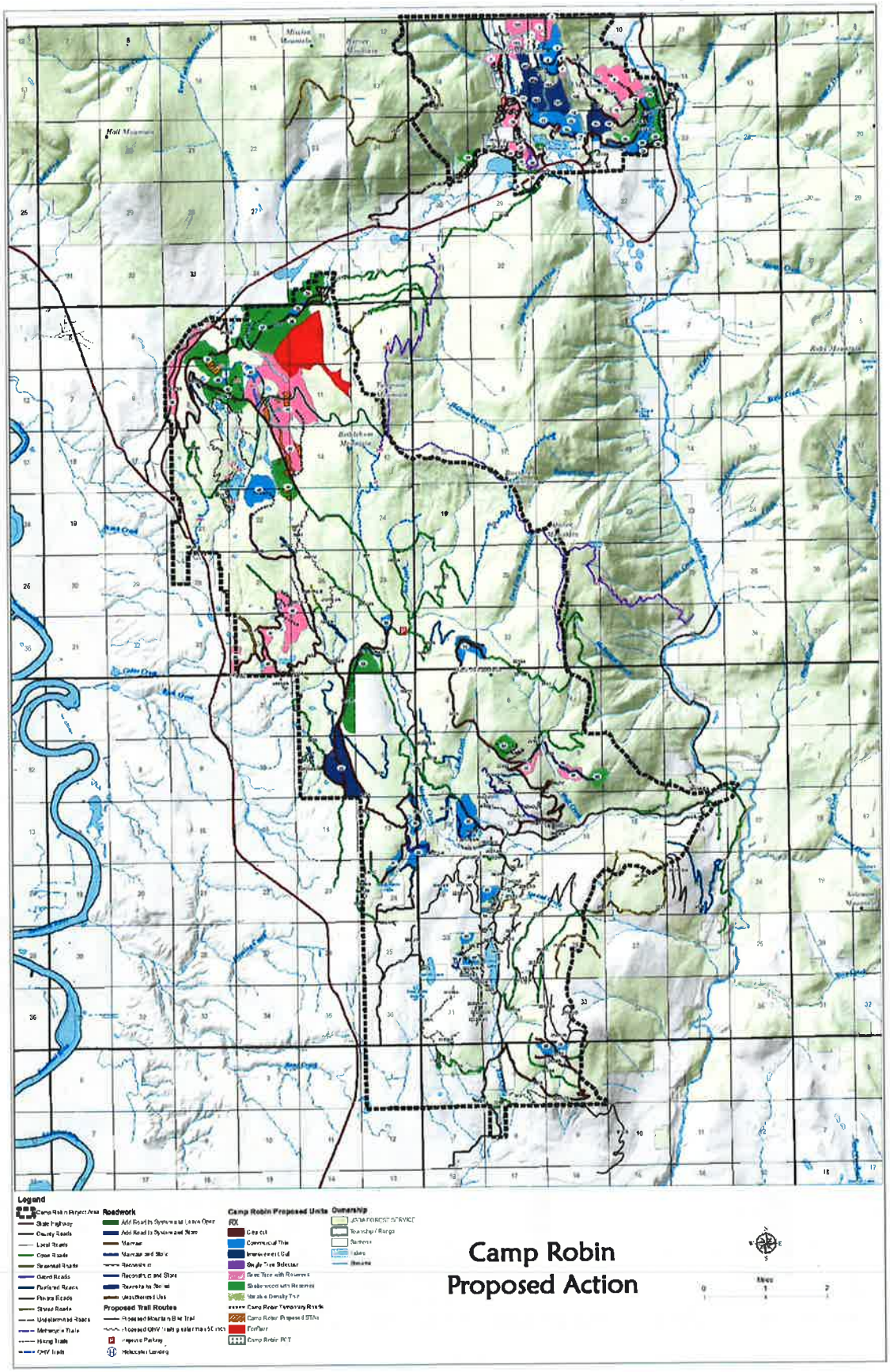

Figure 3 Proposed Action

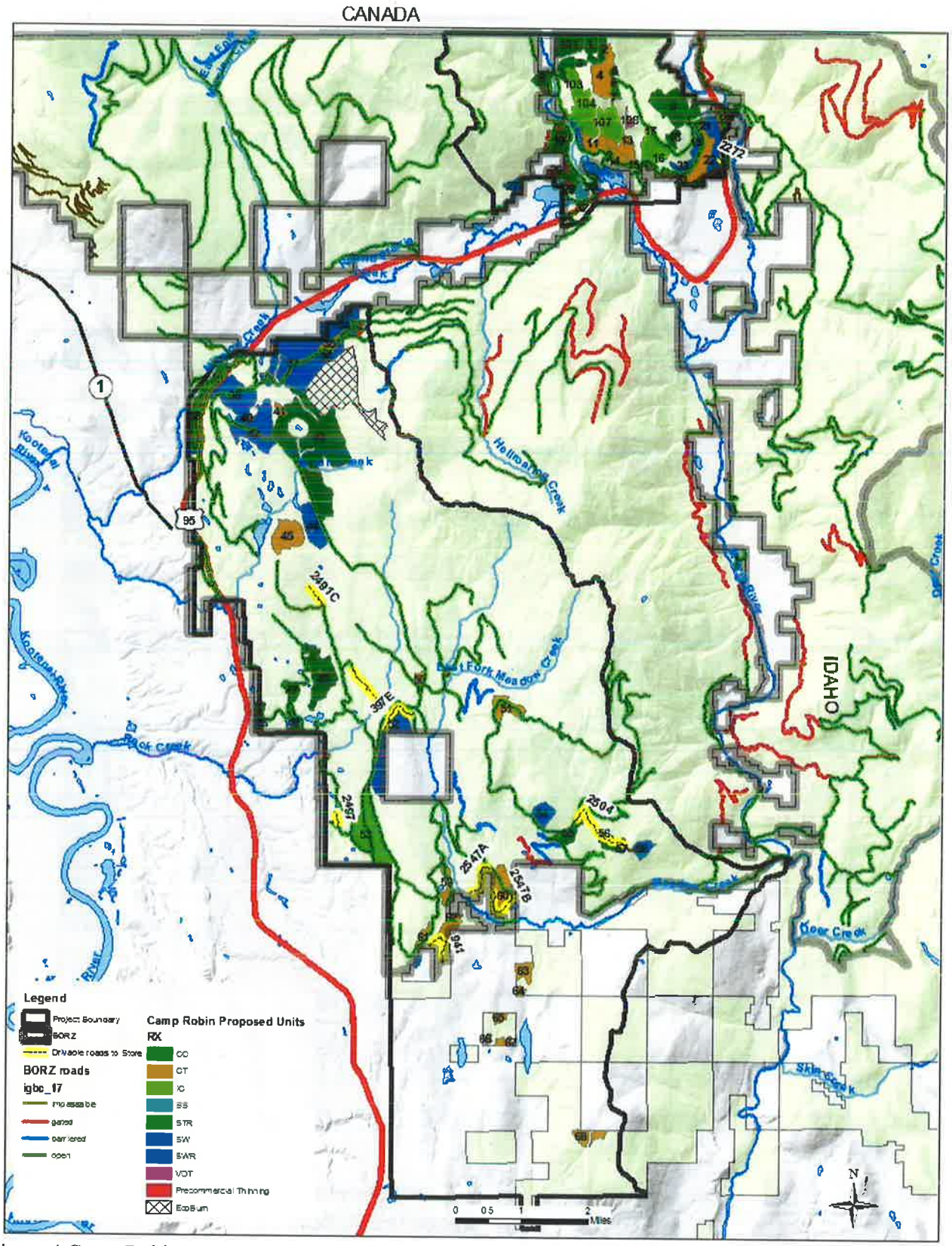

Figure 4 Camp Robin – BORZ and Drivable Roads to Store (yellow).

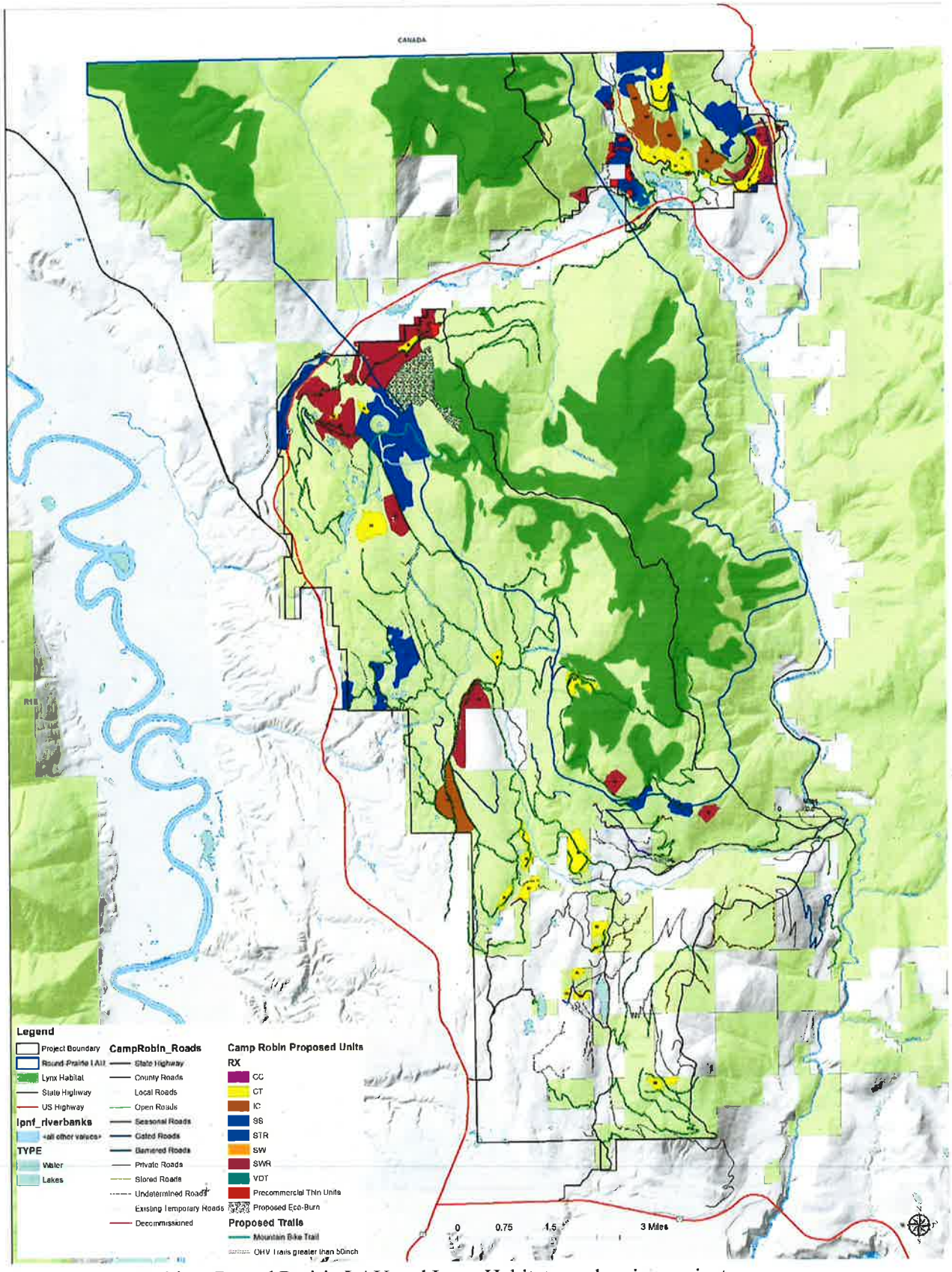

Figure 5 Camp Robin – Round Prairie LAU and Lynx Habitat overlapping project area.

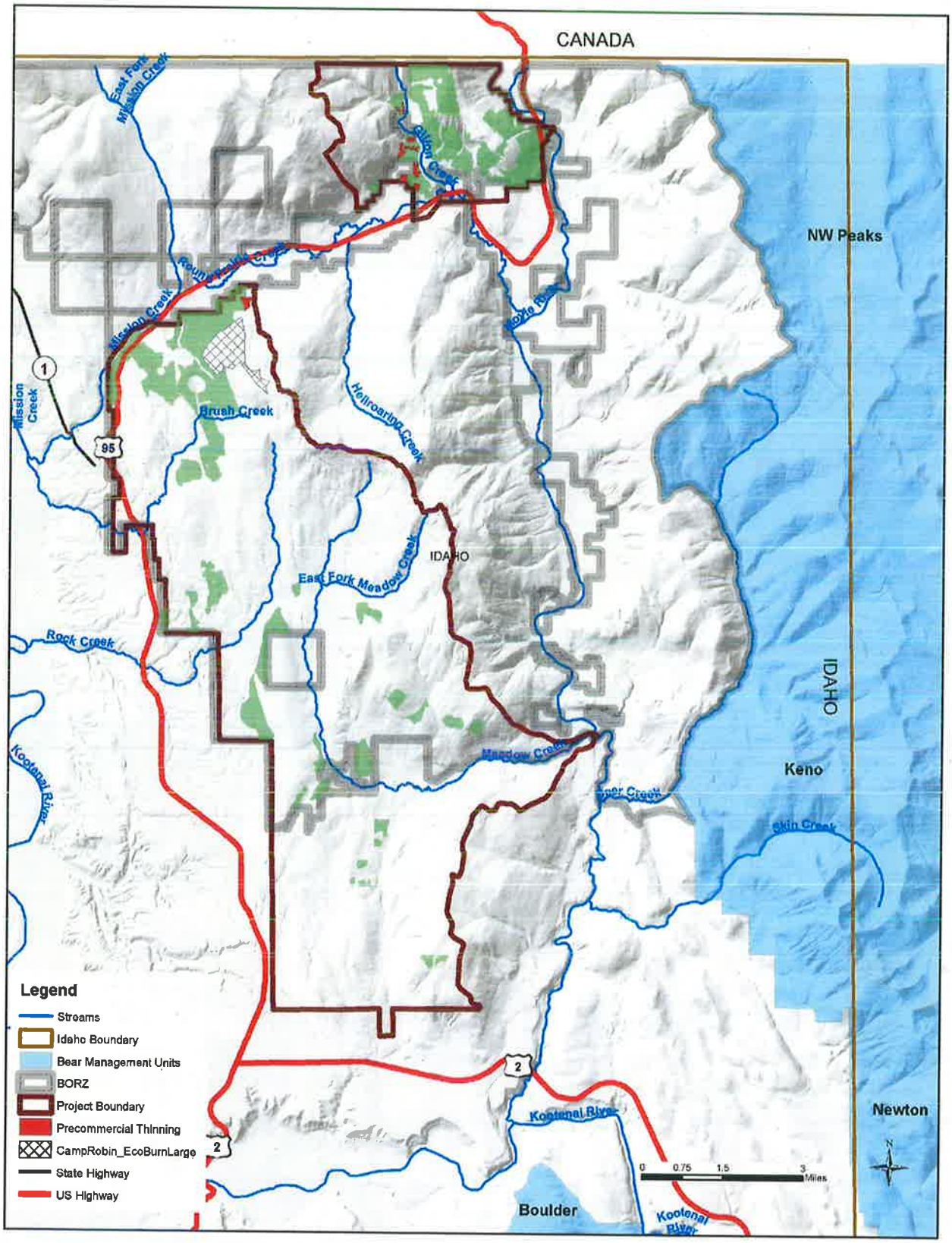

Figure 6 Camp Robin – BORZ and BMUs

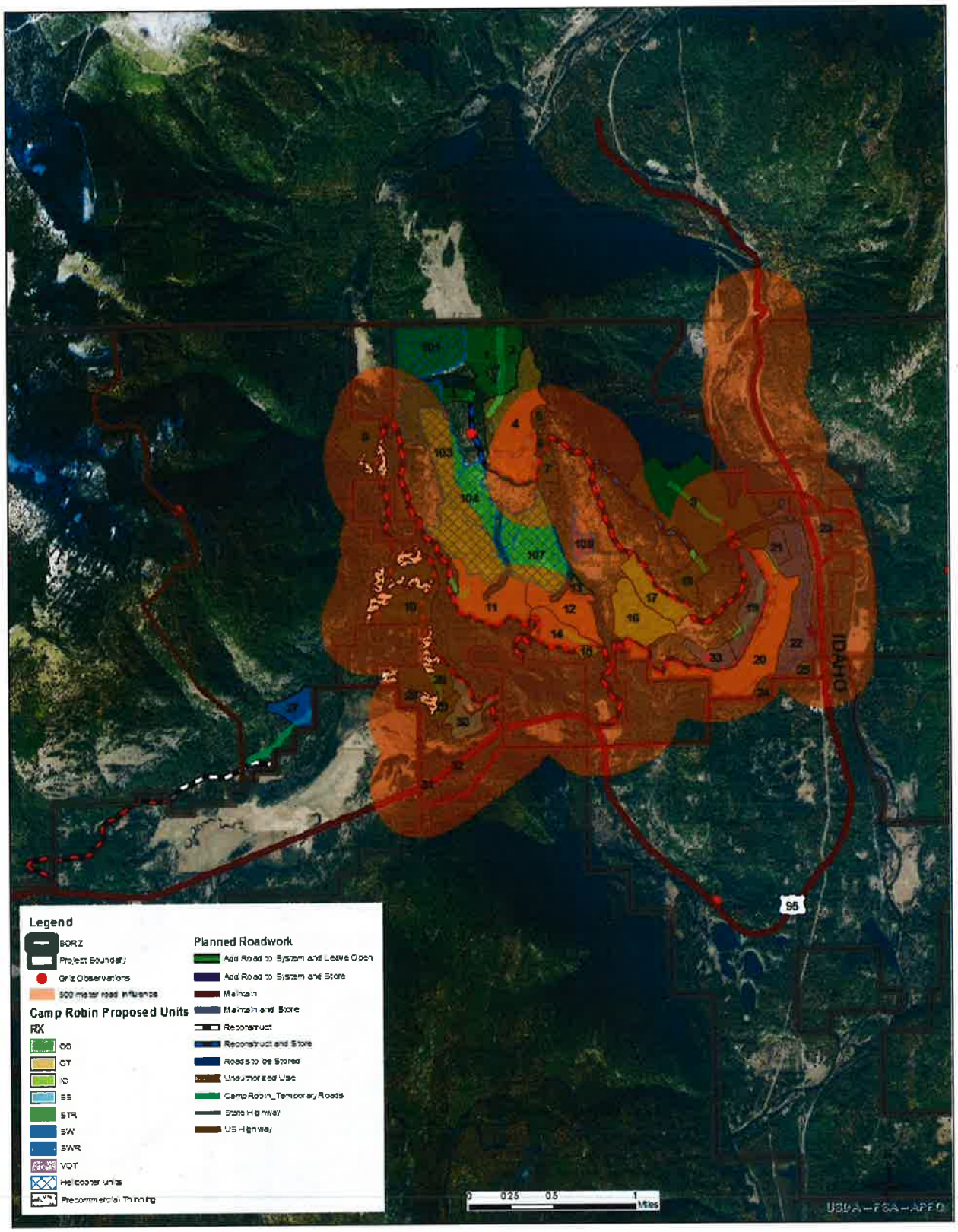

Figure 7 Camp Robin – Helicopter Units and 500 meter Road Influence

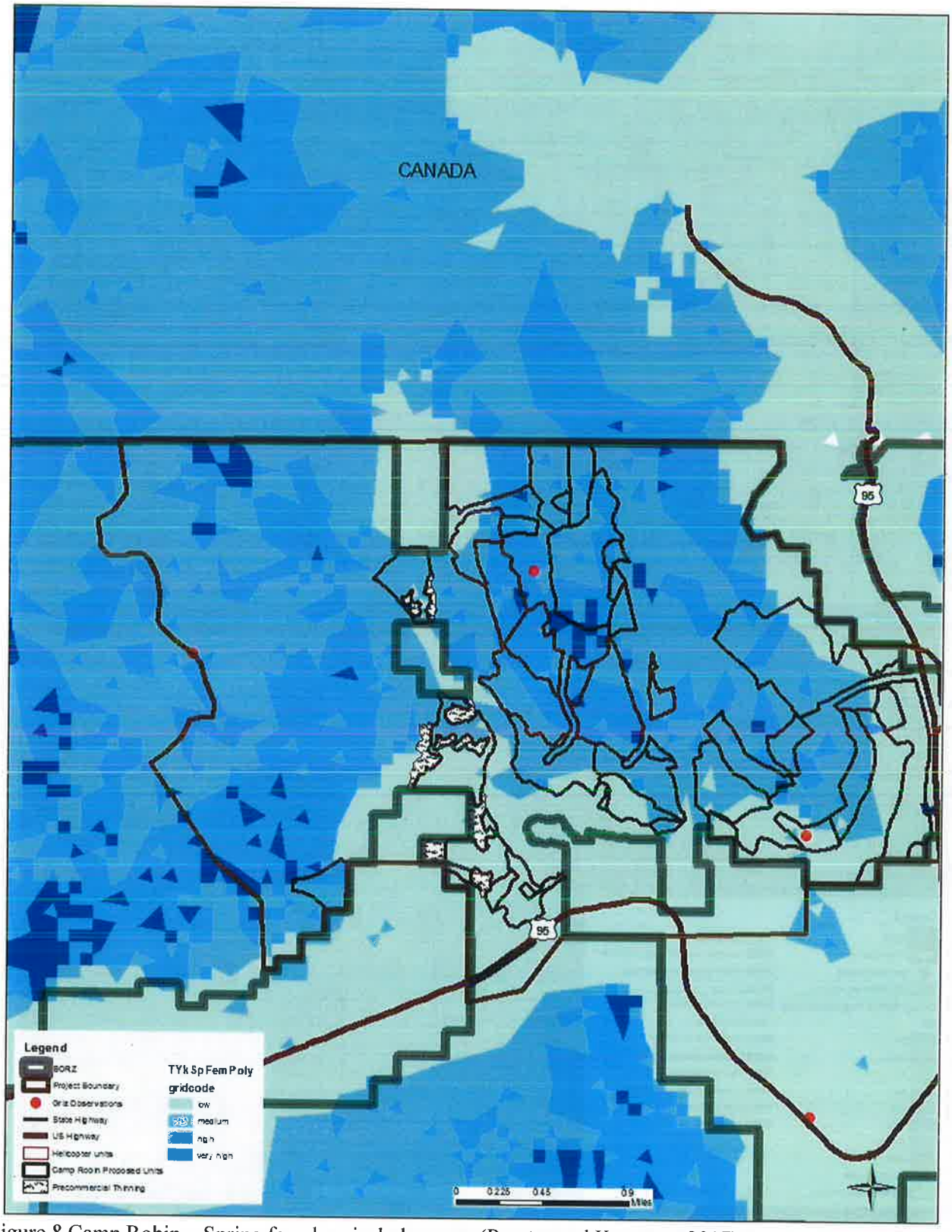

Figure 8 Camp Robin – Spring female grizzly bear use (Proctor and Kasworm 2017)

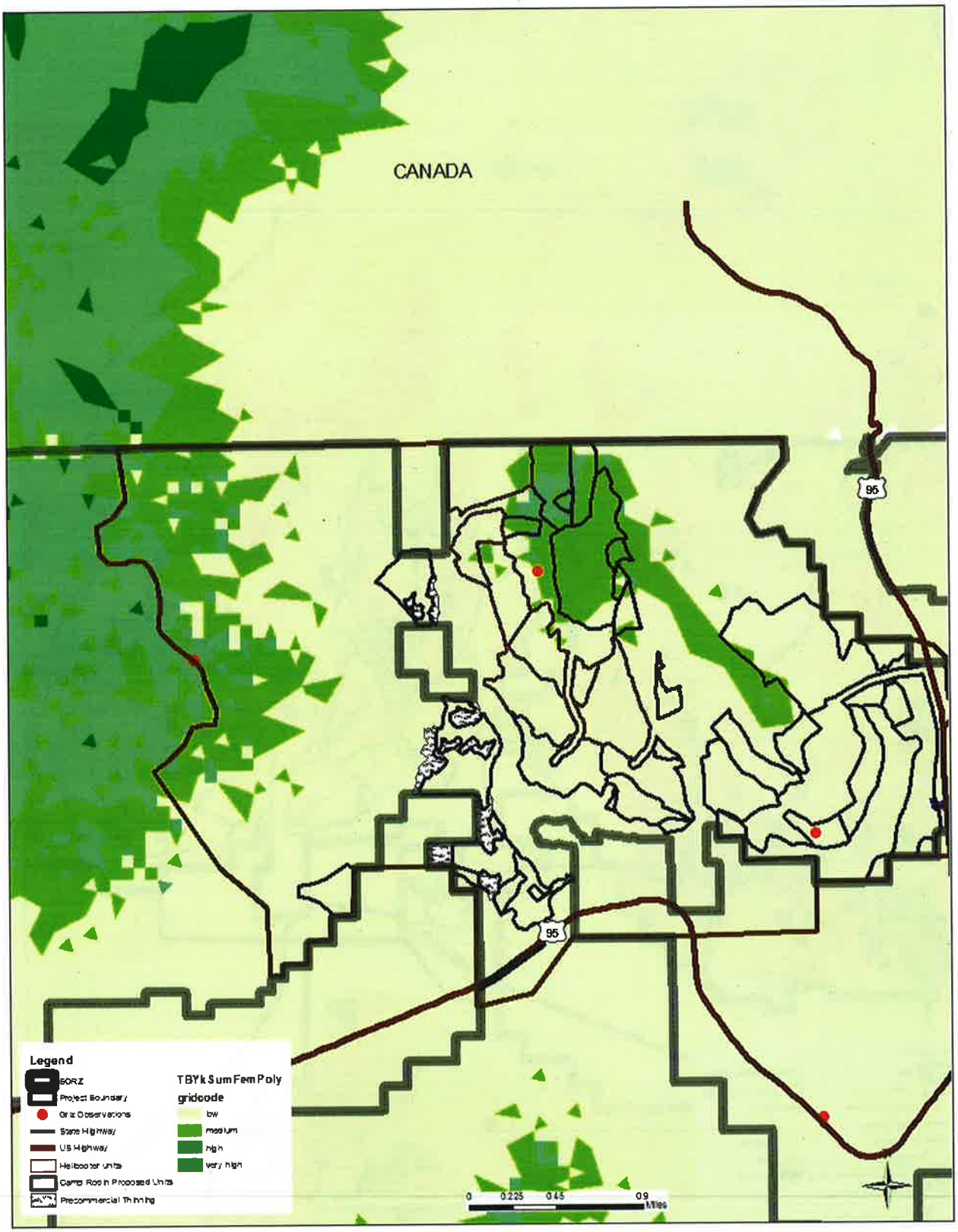

Figure 9 Camp Robin - Summer female grizzly bear use (Proctor and Kasworm 2017)

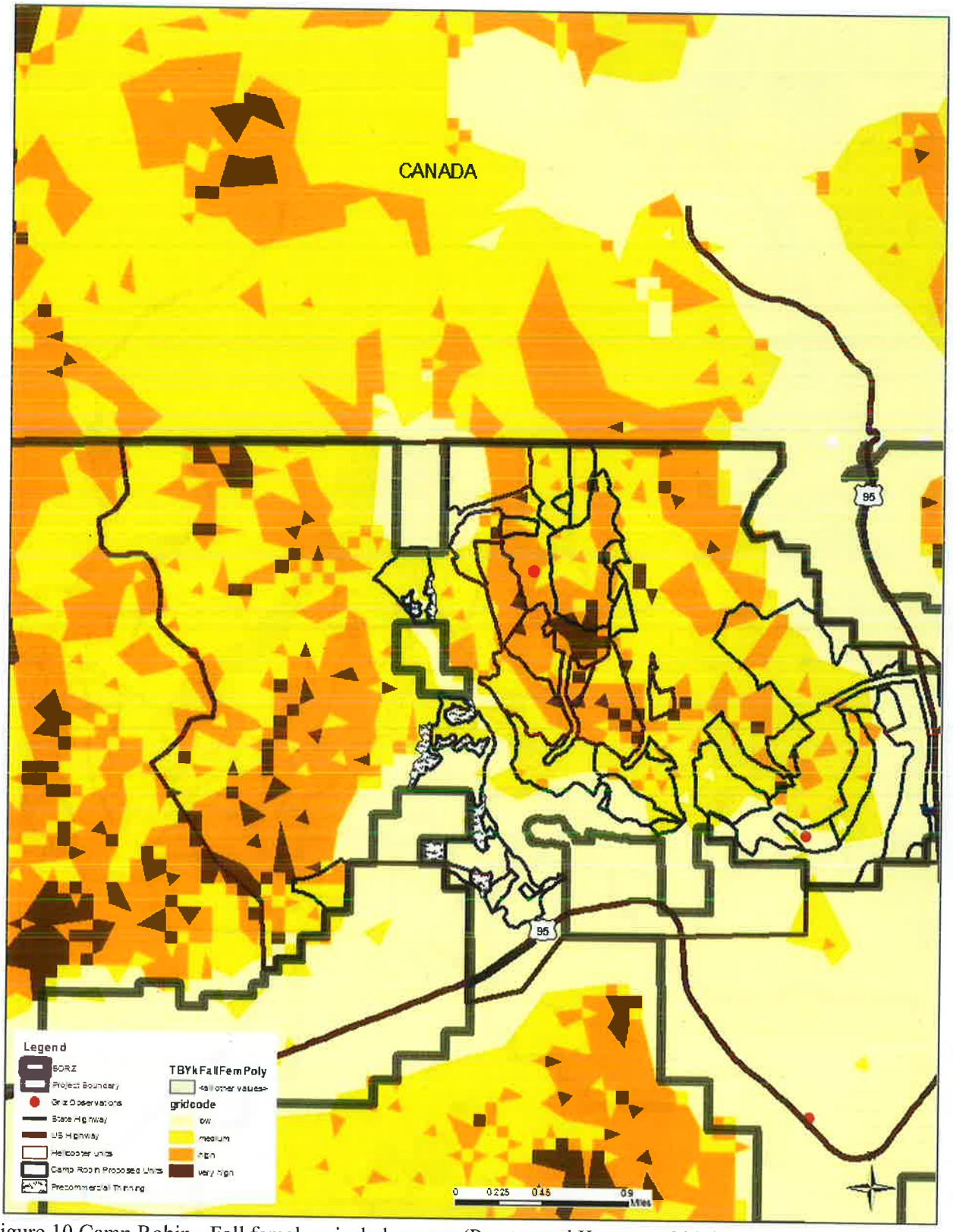

Figure 10 Camp Robin - Fall female grizzly bear use (Proctor and Kasworm 2017)

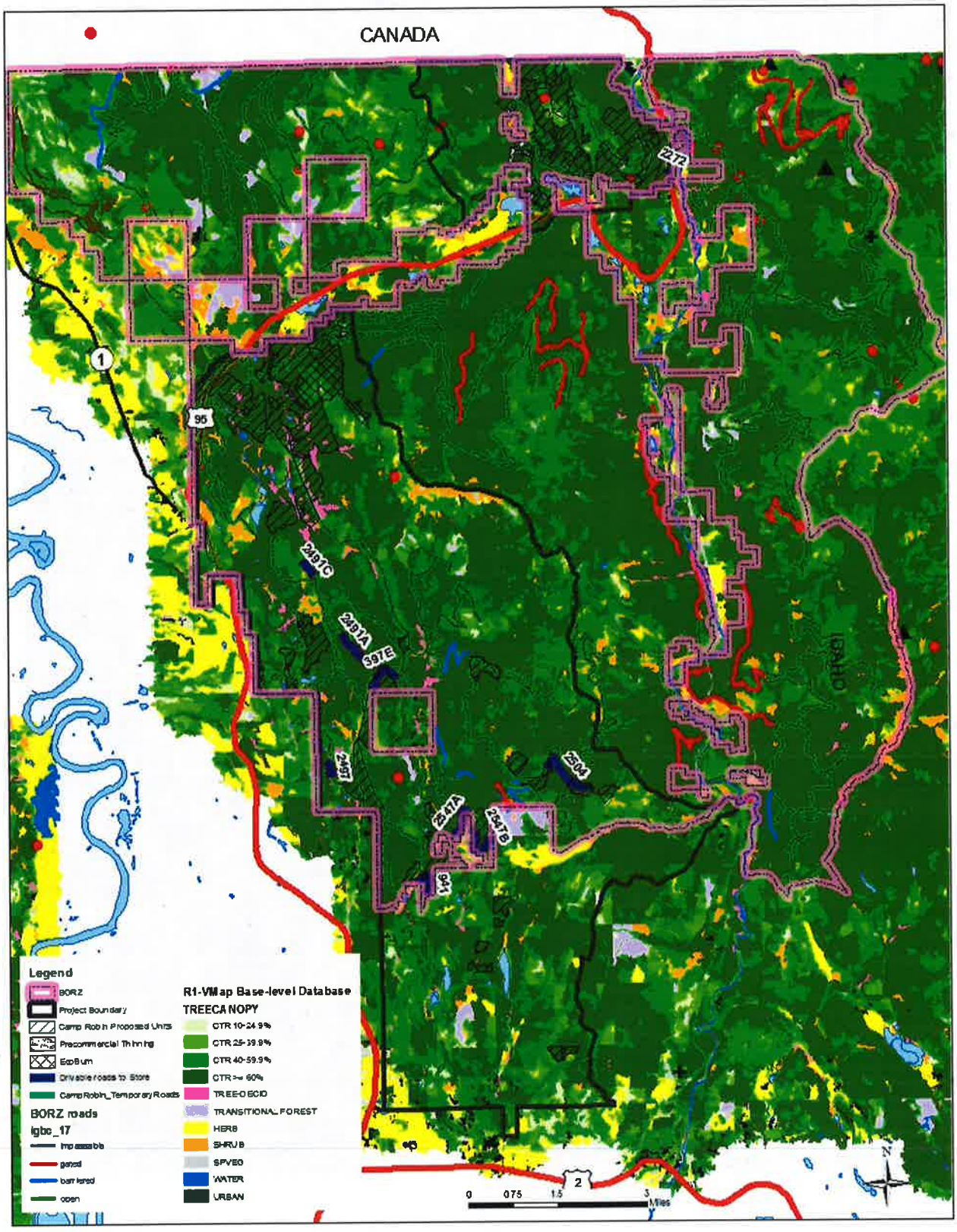

Figure 11 Tree Canopy Percent (a proxy for open areas)

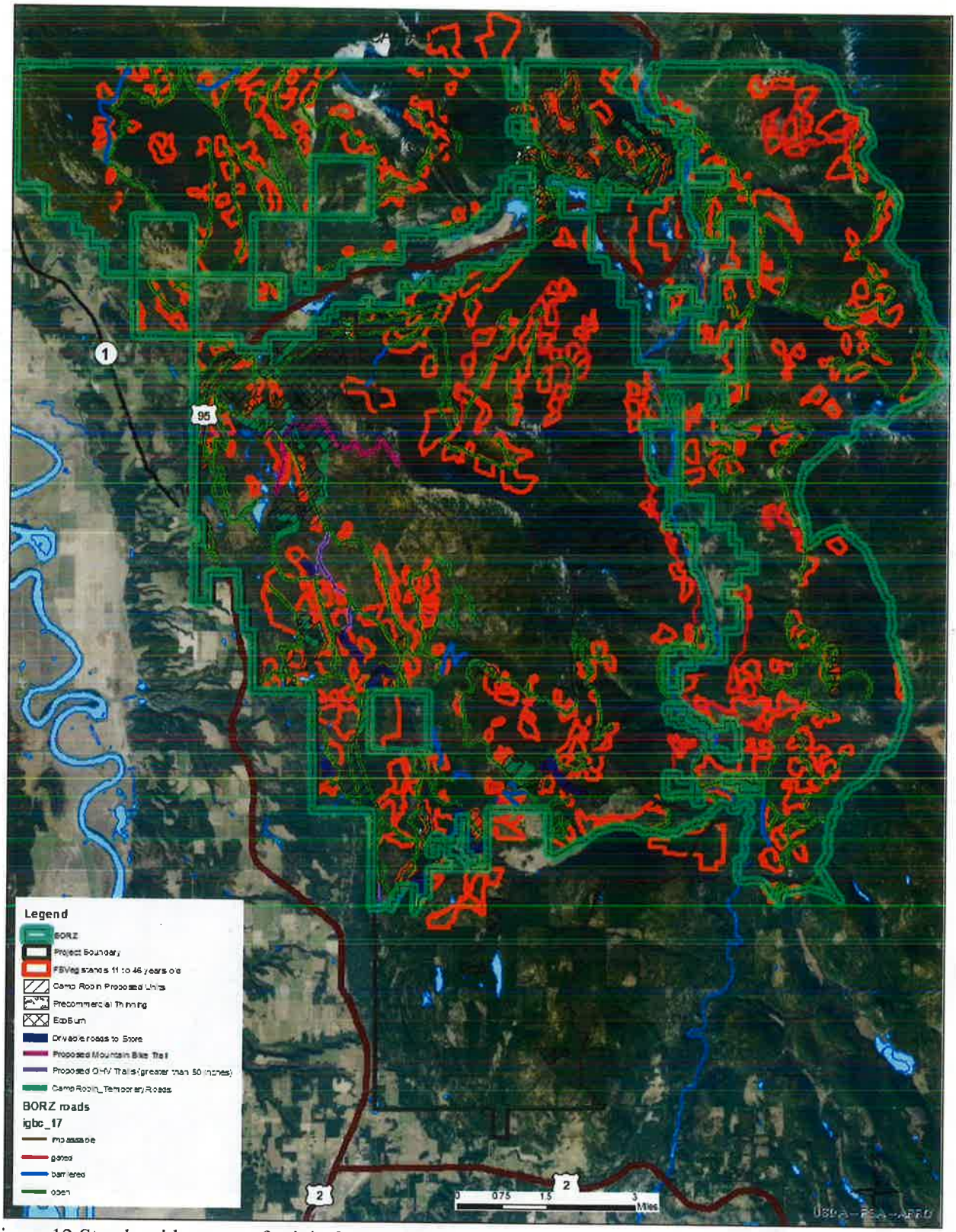

Figure 12 Stands with a year of origin from 11 to 46 years

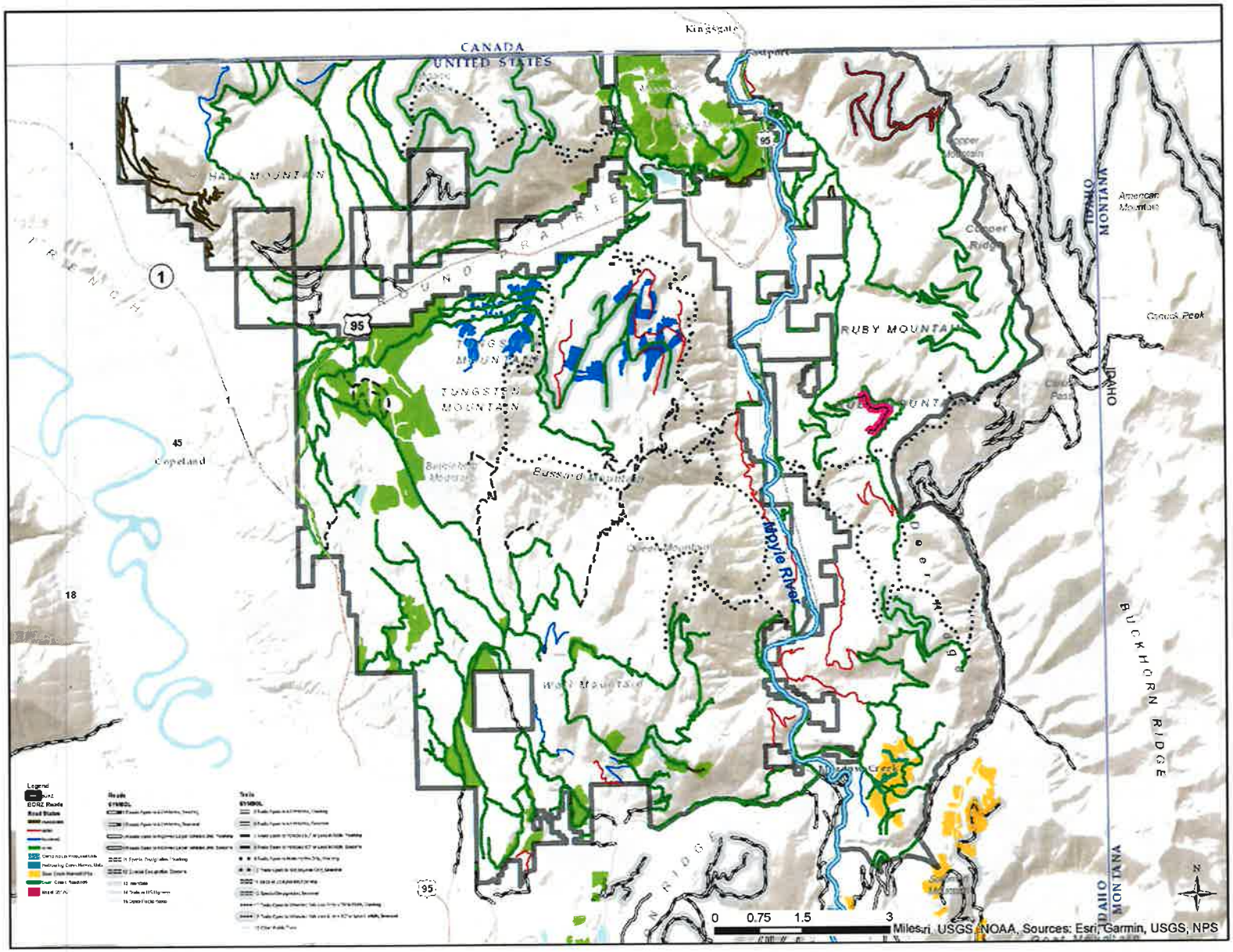

Figure 13 Geographic and temporal separation of ongoing activities within the Mission-Moyie BORZ

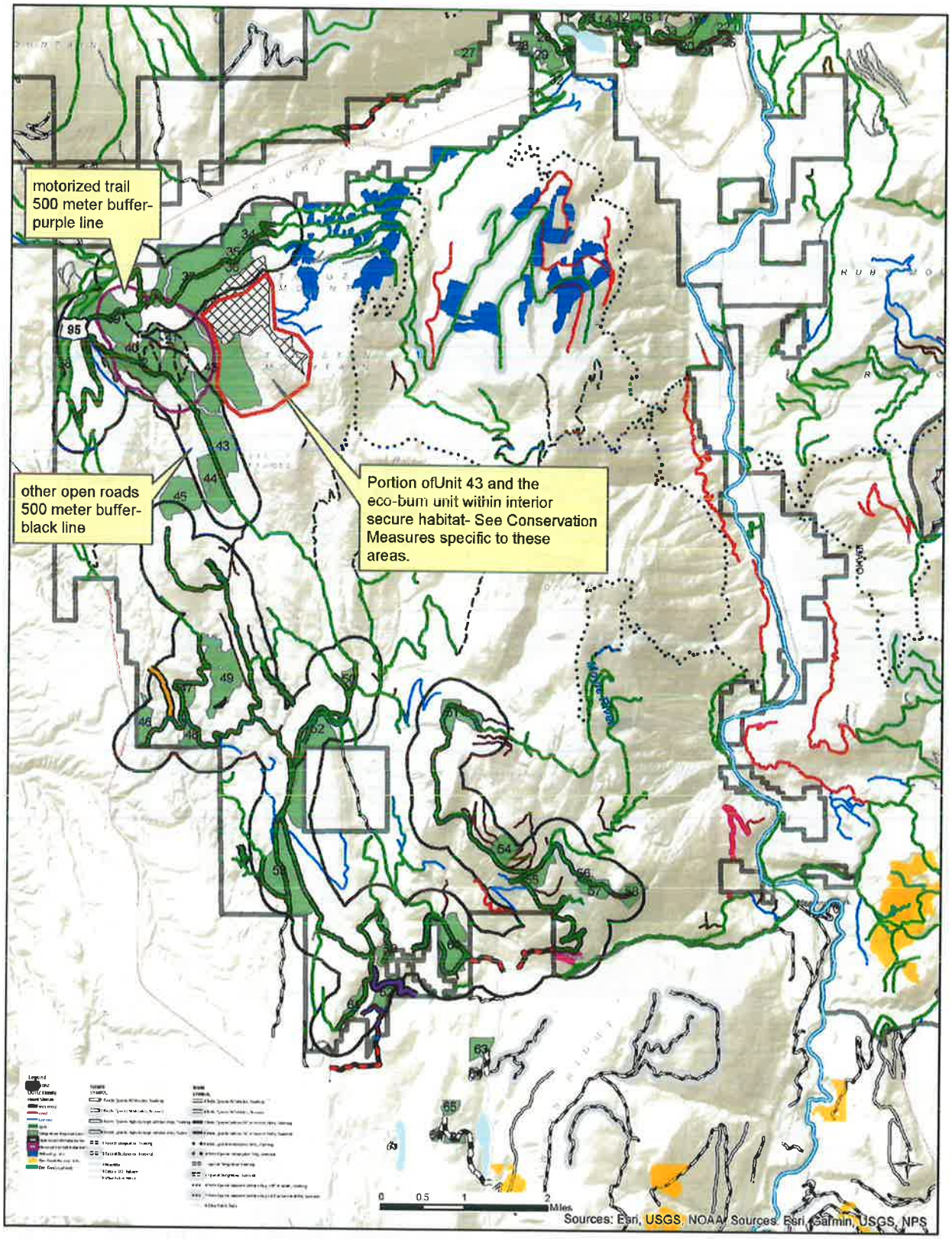

Figure 14 Spatial display of Camp Robin activities within interior secure habitat within the Mission-Moyie BORZ

LITERATURE CITED

Allen, L.R. 2011. A review of Grizzly Bear Recurring Use Areas Associated with the Selkirk and Cabinet-Yaak Ecosystems. Unpublished report. Idaho Panhandle National Forests, Coeur d'Alene, Idaho. 20 pp.

Aubry K.B., L.F. Ruggiero, J.R. Squires, K.S. McKelvey, G.M. Koehler, S.W. Buskirk, and C.J. Krebs. 2000. Conservation of lynx in the United States: a systematic approach to closing critical knowledge gaps. Ch. 17 *in* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, J.R. Squires. Ecology and conservation of lynx in the United States. General Technical Report RMRS-GTR-30. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO. 474 pp.

Aune, K. and W. Kasworm. 1989. East Front Grizzly Studies – Final Report. Montana Department of Fish, Wildlife, and Parks. Helena, MT. 332 pp.

Buskirk, S. W., L. F. Ruggiero, K. B. Aubry, D. E. Pearson, J. R. Squires, and K. S. McKelvey. 2000. Comparative ecology of lynx in North America. Chapter 14 *in* Ruggiero, L.F., K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires. (tech. eds.). Ecology and conservation of lynx in the United States. General Technical Report RMRS-GTR-30. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO. 474 pp.

Claar, J.J., N. Anderson, D. Boyd, M. Cherry, B. Conard, R. Hompesch, S. Miller, G. Olson, H. Ihsle Pac,J. Waller, T. Wittinger, H. Youmans. 1999. Carnivores. Pages 7.1– 7.63 *in* Joslin, G. and H. Youmans, coordinators. Effects of recreation on Rocky Mountain wildlife: A Review for Montana. Committee on Effects of Recreation on Wildlife. Montana Chapter of The Wildlife Society. 307 pp.

Holbrook, J.D., J.S. Squires, L.E Olson, R.L. Lawrence, and S. Savage. 2016. Multi-scale habitat relationships of snowshoe hares (Lepus americanus) in the mixed conifer landscape of the Northern Rockies, USA: cross-scale effects of horizontal cover with implications for forest management. Ecology and Evolution 7:125-144.

Holbrook, J.D., J.R. Squires, L.E. Olson, N.J. DeCesare, and R.L. Lawrence. 2017. Understanding and predicting habitat for wildlife conservation: the case of Canada lynx at the range periphery. Ecosphere 8:e01939.

Holbrook, J.D., J.R. Squires, B. Bollenbacher, R. Graham, L.E. Olson, G. Hanvey, S. Jackson and R.L. Lawrence. 2018. Spatio-temporal responses of Canada lynx to silvicultural treatments within the Northern Rockies, U.S. Forest Ecology and Management 422:114-124.

Holden, Z., W. Kasworm, C. Servheen, B. Hahn, and S. Dobrowski. 2012. Sensitivity of Berry Productivity to Climatic Variation in the Cabinet-Yaak Grizzly Bear Recovery Zone, Northwest United States, 1989-2010.

Interagency Grizzly Bear Committee (IGBC). 1986. Interagency Grizzly Bear Guidelines. 100 pp.

Interagency Grizzly Bear Committee (IGBC). 1987. Grizzly Bear Compendium. USDI US Fish and Wildlife Service. 540 pp. (Excerpt 7 pp.)

Interagency Grizzly Bear Committee (IGBC). 1998. Grizzly Bear/Motorized Access Management. Interagency Grizzly Bear Committee Taskforce Report. 7 pp.

Interagency Lynx Biology Team. 2013. Canada lynx conservation assessment and strategy. 3rd edition. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication R1-13-19, Missoula, MT. 128 pp.

Kasworm, W. and T. Manley. 1988. Grizzly bear and black bear ecology in the Cabinet Mountains of Northwest Montana. Montana Department of Fish, Wildlife and Parks. 122 pp.

Kasworm, W., T. Radandt, J. Teisberg, A. Welander, M.Proctor, and H. Cooley. 2017. Cabinet-Yaak grizzly bear recovery area 2016 research and monitoring progress report. 101 pp.

Kasworm, W., T. Radandt, J. Teisberg, A. Welander, M.Proctor, and H. Cooley. 2018. Cabinet-Yaak grizzly bear recovery area 2017 research and monitoring progress report. 102 pp.

Kasworm, W. 2018. Email Communication regarding bear use within the Mission-Moyie BORZ.

Kasworm, W. 2018. Conference call between Kasworm, U.S. Fish and Wildlife consultation biologist and U.S. Forest Service biologists regarding effects of helicopter logging within the Mission-Moyie BORZ.

Koehler, G.M. and K.B. Aubry. 1994. Lynx. Chapter 4 *in* Ruggiero, L.F.; Aubry, K.B.; Buskirk, S.W.; Lyon, L.J.; and Zielinski, W.J. Scientific Basis for Conserving Forest Carnivores in the Western United States: American Marten, Fisher, Lynx and Wolverine. Gen. Tech. Report RM-GTR-254. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. 184 pp.

Kosterman, M., J.S. Squires, J.D. Holbrook, D. Pletscher, and M. Hebblewhite. 2018. Forest structure provides the income for reproductive success in a southern population of Canada lynx. Ecological Applications 28:1032-1043.

Larkin, R. 1996. Effects of Military Noise on Wildlife: A Literature Review. Center for Wildlife Ecology, Illinois Natural History Survey. CERL Technical Report. Champaign, Il.

Lyndaker, Brett. 2018. Personal communication regarding potential denning habitat within the Camp Robin project area. B.Lyndaker is the District Wildlife Biologist on the Bonners Ferry Ranger District.

Mace, R.D. and J.S. Waller. 1996. Grizzly bear distribution and human conflicts in Jewel Basin Hiking Area, Swan Mountains, Montana. Wildl. Soc. Bull. 24:461-467.

Martin, P. 1983. Factors influencing globe huckleberry fruit production in northwestern Montana. Int. Conf. Bear Res. and Manage. 5:159-165.

McKelvey, K.S., Y.K. Ortega, G.M. Koehler, K.B. Aubry and J.D. Brittell. 2000. Canada lynx habitat and topographic use patterns in North Central Washington: A reanalysis. Ch. 10 *in* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, J.R. Squires. Ecology and conservation of lynx in the United States. General Technical Report RMRS-GTR-30. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO. 474 pp.

McLellan, B.N and D.M. Shackleton. 1989. Immediate reactions of grizzly bears to human activities. Wildl. Soc. Bull. 17:269-274.

Mowat, G., K.G. Poole and M. O'Donoghue. 2000. Ecology of lynx in northern Canada and Alaska. Ch. 9 *in* Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, J.R.Squires. Ecology and conservation of lynx in the United States. General Technical Report RMRS-GTR-30. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO. 474 pp.

Oliver, C.D. and B.C. Larson. 1996. Forest Stand Dynamics. Pages 145-170, 213-234. 520 p.

Petesch, Steve. 2018. Personal Communication, email.

Proctor, M., W. Kasworm. 2017. Fine scale grizzly bear habitat modeling for the South Selkirk and Cabinet-Yaak ecosystems Trans-border Grizzly Bear Project and the US Fish and Wildlife Service. Unpublished. 8 pp.

Reynolds, P.E., H.V. Reynolds and R.H. Follmann. 1986. Responses of grizzly bears to seismic surveys in northern Alaska. Bears: Their Biology and Management, Volume 6, A Selection of Papers from the Sixth International Conference on Bear Research and Management, Grand Canyon, AZ, February 1983. p. 169-175.

Ruediger, B., J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wenger, and A. Williamson. 2000. Canada lynx conservation assessment and strategy. U.S. Forest Service, U.S. Bureau of Land Management, and U.S. National Park Service. Forest Service Publication #R1-00-53, Missoula, MT.

Squires, J.R., L.F. Ruggiero, J.A. Kolbe and N.J. Decesare. 2006. Lynx Ecology of the Intermountain West. Research Program Summary. USDA Forest Service, Rocky Mountain Research Station, Missoula, MT. 51 pp.

Squires, J.R., N.J. Decesare, J.A. Kolbe and L.F. Ruggiero. 2010. Seasonal resource selection of Canada lynx in managed forests of the Northern Rocky Mountains. Journal of Wildlife Management 74:1648-1660.

USDA Forest Service. 1995. Final Environmental Impact Statement – Noxious Weed Management Projects. Bonners Ferry Ranger District, Bonners Ferry, ID. 144 pp.

USDA Forest Service. 2007. Northern Rockies lynx management direction: Record of decision (ROD). National forests in Montana and parts of Idaho, Wyoming, and Utah. 51 p + attachments..

USDA Forest Service. 2011. Record of Decision – Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones. Kootenai, Lolo and Idaho Panhandle National Forests. USDA Forest Service Northern Region, Missoula, MT. 68 pp.

USDA Forest Service. 2015. Land Management Plan – 2015 Revision. Idaho Panhandle National Forests. Coeur d'Alene, ID. 187 pp.

USDA Forest Service. 2017. Cabinet-Yaak/Selkirk Grizzly Bear Recovery Zones 2016 Annual Monitoring Summary Report, Idaho Panhandle National Forests. 11 pp.

USDA Forest Service. 2018a. Canada lynx – a review of recently published papers relative to Canada lynx research in Northwest Montana. Northern Region unpublished report. 13 p.

USDA Forest Service. 2018b. Cabinet-Yaak/Selkirk Grizzlly Bear Recovery Zones 2017 Annual Monitoring Summary Report, Colville, Idaho Panhandle, Kootenai, and Lolo National Forests. 12 pp.

USDA Forest Service and USDI Fish and Wildlife Service. 2009. Guide to Effects Analysis of Helicopter Use in Grizzly Bear Habitat. Montana/Northern Idaho Level 1 Terrestrial Biologists Team, Missoula, Montana. 18 pp.

USDI Fish and Wildlife Service. 1993. Grizzly Bear Recovery Plan. Missoula, MT. 181 pp.

USDI Fish and Wildlife Service. 1994. Selkirk Mountain Caribou Recovery Plan. Portland, OR. 63 pp.

USDI Fish and Wildlife Service. 2000. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Contiguous U.S. Distinct Population Segment of the Canada Lynx and Related Rule. Federal Register 65, No. 58: p. 16052-16086.

USDI Fish and Wildlife Service. 2003. Wildfires and Grizzly Bears. U.S. Fish and Wildlife Service, Mountain-Prairie Region. 1 p.

USDI Fish and Wildlife Service. 2007. Biological Opinion on the effects of the Northern Rocky Mountains Lynx Amendment on the Distinct Population Segment (DPS) of Canada Lynx (Lynx

canadensis) (lynx) in the contiguous United States. U.S. Fish and Wildlife Service Montana Field Office, Helena, Montana. 85 pp.

USDI Fish and Wildlife Service. 2011. Biological Opinion on the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Idaho Panhandle, and Lolo National Forests. U.S. Fish and Wildlife Service Montana Field Office Kalispell, Montana and U.S. Fish and Wildlife Service Northern Idaho Field Office Spokane, Washington. 227 pp.

USDI Fish and Wildlife Service. 2012. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southern Selkirk Mountains Population of Woodland Caribou; Final Rule. November 28, 2012. Federal Register Vol. 77, No. 229: p. 71042-71082.

USDI Fish and Wildlife Service. 2013a. Biological Opinion on the Revised Forest Plan for the Idaho Panhandle National Forests. U.S. Fish and Wildlife Service Northern Idaho Field Office Spokane Valley, Washington and U.S. Fish and Wildlife Service Montana Field Office Kalispell, Montana.

USDI Fish and Wildlife Service. 2013b. Endangered and Threatened Wildlife and Plants; Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States, Proposed Rule. February 4, 2013. Federal Register Vol. 78, No. 23: p. 7864-7890

USDI Fish and Wildlife Service. 2014a. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary; Final Rule. September 12, 2014. Federal Register Vol. 79, No. 177: p. 54782-54845.

USDI Fish and Wildlife Service. 2014b. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To Delist the Southern Selkirk Mountains Population of Woodland Caribou and Proposed Rule To Amend the Listing; Proposed Rule. May 8, 2014. Federal Register Vol. 79, No. 89: p. 26504-26535.

USDI Fish and Wildlife Service. 2014c. Wolverine Programmatic Biological Assessment Concurrence. File: M19 Forest Service Region 1 (06E11000-2014-I-0291 wolverine programmatic – NLJ; 01EIFW00-2014-I-0512 (IFWO-NIFO) – NLJ). U.S. Fish and Wildlife Service Montana and Northern Idaho Field Offices. May 23, 2014.

USDI Fish and Wildlife Service. 2018. List of threatened and endangered species that may occur in the Camp Robin project area. Consultation Code: 01EIFW00-2018-E-03935. September 11, 2018. 14 pp.

USDI National Park Service. 2003. Environmental Assessment to Conduct Additional Administrative Helicopter and Fixed Wing Flights in 2003. Glacier National Park, West Glacier, Montana. 53 pp.

Volsen, D.P. 1994. Habitat use of a grizzly bear *(Ursus arctos)* population in the Selkirk Mountains of Northern Idaho and Southern British Columbia. **M.S.** thesis, College of Forestry, Wildlife and Range Sciences. University of Idaho, Moscow, ID. 106 pp.

Zager, P., C. Jonkel and J. Habeck. 1983. Logging and wildfire influence on grizzly bear habitat in northwestern Montana. Int. Conf. Bear Res. and Manage. 5:124-132.

STATEMENT OF FINDINGS

Based on the above analysis, I conclude that Camp Robin Project ***may affect,*** and is ***not likely to adversely affect*** Canada lynx; ***may affect,*** and is ***not likely to adversely affect*** grizzly bear; and would have ***no effect*** on woodland caribou, woodland caribou critical habitat, or Canada lynx critical habitat.

Prepared By: Lyriola Bernhardt Date: 11-30-18

Wildlife Biologist
North Idaho Strike Team

Attachment A - Grizzly Bear Management and Protection Plan

IPNF employees, volunteers, contractors, subcontractors, and other Federal/State agencies will comply with the following requirements in the conduct of any activities conducted in or adjacent to BMUs on National Forest System lands. This protection plan will be made available to all personnel conducting activity within or adjacent to BMUs and will be displayed in a conspicuous location at any contractor/subcontractors place of business and in each camp. This plan will be reviewed during a pre-work meeting with contractors; and with Forest Service employees/volunteers in conjunction with Job Hazard Analysis reviews.

1. All personnel involved in activities within grizzly bear habitat on National Forest land will be given information relating to identification of bear species and human conduct prior to the start of activities. Brochures concerning human use in grizzly country and bear identification are available at Forest Service offices. The contractor is responsible for making employees aware of the following information:
    a. The grizzly bear is classified as threatened under the Endangered Species Act.
    b. The Forest Service is mandated to conduct management activities in a manner that promotes recovery of all threatened and endangered species.
    c. The areas they are working in are within grizzly bear habitat and are essential to the recovery of the bear.
    d. Grizzly bear/human encounters are possible.
    e. In compliance with the IPNF Food Storage Order, the proper techniques of food handling and storage, travel, camping, and other such activities are required to reduce opportunities for conflict.
    f. Penalties for illegal killing of grizzly bears include up to $100,000 fine and one year in jail.
2. All personnel will be given a copy of the IPNF Food Storage Order and will adhere to the requirements contained within it.
3. The contractor will adhere to all restrictions as outlined in current Idaho Panhandle National Forests Motor Vehicle Use Map, unless authorized otherwise.
4. The responsible party shall report the death and location of livestock to a Forest Service official within 24 hours of discovery.
5. The responsible party shall report any human/bear conflicts or grizzly bear observations to the Forest Service.

Additional Camping Provisions

1. Dispose of human waste and gray water in a pit or hole, well away from campsites. Cover with sod or topsoil.
2. Follow "Leave no Trace" techniques.

Human Safety Provisions

1. If you observe a grizzly bear - detour or leave the area. A sow with cubs is particularly dangerous, as is a bear that has been surprised.
2. Use caution in approaching carcasses or gut piles.